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**Department of Defense  
Fiscal Year (FY) 2014 President's Budget Submission**

April 2013



**Chemical and Biological Defense Program**

*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 2014 • 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 2014 budget request includes \$1.5 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 FY2012 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 21<sup>st</sup> 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. 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.

### **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 decisionmaking 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 strengthening our ability to conduct forensics and attribution and to prevent re-attack. The CBDP capabilities represent both pre-event (early warning and indications) and post-event (effective consequence management and persistent surveillance for re-emergence) activities 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.

## **CBDP Support to Priorities to Counter Biological Threats (Presidential Policy Directive-2)**

The CBDP budget directly supports the National Security Staff (NSS) FY 2014 policy priorities for resourcing the *National Strategy for Countering Biological Threats*. These policy priorities spell out four major focus areas supported directly or tangentially by the CBDP:

1) Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events. 2) Establish and reinforce norms against the misuse of the life sciences. 3) Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities. 4) Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents. Priorities 1, 3, and 4 are directly supported across the CBDP FY14 budget submission. Priority 2 is addressed within the CBDP primarily through compliance with applicable DoD and Interagency biosafety and biological security standards that is inherent in all CBDP research done by government entities and contractors alike. All four NSS priorities are addressed throughout the CBDP S&T, Advanced Development, and Procurement efforts. Specific efforts against these priorities are detailed in the mission description and budget item justifications.

### **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.



Department of Defense  
 FY 2014 President's Budget  
 Exhibit R-1 FY 2014 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Feb 2013

Appropriation	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base
Research, Development, Test & Eval, DW	1,140,215	1,105,803			1,105,803	1,201,953
Total Research, Development, Test & Evaluation	1,140,215	1,105,803			1,105,803	1,201,953

R-1C: FY 2014 President's Budget (Published Version), as of February 26, 2013 at 11:34:48

\* Reflects the FY 2013 President's Budget with an undistributed adjustment to match the Annualized Continuing Resolution funding level by appropriation.

Department of Defense  
 FY 2014 President's Budget  
 Exhibit R-1 FY 2014 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Feb 2013

Summary Recap of Budget Activities	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base
Basic Research	46,561	50,566			50,566	51,426
Applied Research	223,009	223,269			223,269	227,065
Advanced Technology Development	225,441	234,280			234,280	170,847
Advanced Component Development And Prototypes	201,871	179,023			179,023	196,237
System Development And Demonstration	308,791	311,071			311,071	451,306
Management Support	116,705	92,849			92,849	92,046
Operational System Development	17,837	14,745			14,745	13,026
Total Research, Development, Test & Evaluation	1,140,215	1,105,803			1,105,803	1,201,953
Summary Recap of FYDP Programs						
Research and Development	1,140,215	1,105,803			1,105,803	1,201,953
Total Research, Development, Test & Evaluation	1,140,215	1,105,803			1,105,803	1,201,953

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Defense-Wide  
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 (Dollars in Thousands)

26 Feb 2013

Summary Recap of Budget Activities -----	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base
Basic Research	46,561	50,566			50,566	51,426
Applied Research	223,009	223,269			223,269	227,065
Advanced Technology Development	225,441	234,280			234,280	170,847
Advanced Component Development And Prototypes	201,871	179,023			179,023	196,237
System Development And Demonstration	308,791	311,071			311,071	451,306
Management Support	116,705	92,849			92,849	92,046
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Total Research, Development, Test & Evaluation	1,140,215	1,105,803			1,105,803	1,201,953
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Defense-Wide  
 FY 2014 President's Budget  
 Exhibit R-1 FY 2014 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Feb 2013

Appropriation	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base
Chemical and Biological Defense Program	1,140,215	1,105,803			1,105,803	1,201,953
Total Research, Development, Test & Evaluation	1,140,215	1,105,803			1,105,803	1,201,953

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Defense-Wide  
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 Total Obligational Authority  
 (Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base	S e c
7	0601384BP	Chemical and Biological Defense Program	01	46,561	50,566			50,566	51,426	U
		Basic Research		46,561	50,566			50,566	51,426	
18	0602384BP	Chemical and Biological Defense Program	02	223,009	223,269			223,269	227,065	U
		Applied Research		223,009	223,269			223,269	227,065	
39	0603384BP	Chemical and Biological Defense Program - Advanced Development	03	225,441	234,280			234,280	170,847	U
		Advanced Technology Development		225,441	234,280			234,280	170,847	
83	0603884BP	Chemical and Biological Defense Program - Dem/Val	04	201,871	179,023			179,023	196,237	U
		Advanced Component Development And Prototypes		201,871	179,023			179,023	196,237	
120	0604384BP	Chemical and Biological Defense Program - EMD	05	308,791	311,071			311,071	451,306	U
		System Development And Demonstration		308,791	311,071			311,071	451,306	
152	0605384BP	Chemical and Biological Defense Program	06	116,705	92,849			92,849	92,046	U
		Management Support		116,705	92,849			92,849	92,046	
188	0607384BP	Chemical and Biological Defense (Operational Systems Development)	07	17,837	14,745			14,745	13,026	U
		Operational System Development		17,837	14,745			14,745	13,026	
Total Research, Development, Test & Eval, DW				1,140,215	1,105,803			1,105,803	1,201,953	

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 (Dollars in Thousands)

26 Feb 2013

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

Line No	Program Element Number	Item	Act	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base	S e c
7	0601384BP	Chemical and Biological Defense Program	01	46,561	50,566			50,566	51,426	U
		Basic Research		46,561	50,566			50,566	51,426	
18	0602384BP	Chemical and Biological Defense Program	02	223,009	223,269			223,269	227,065	U
		Applied Research		223,009	223,269			223,269	227,065	
39	0603384BP	Chemical and Biological Defense Program - Advanced Development	03	225,441	234,280			234,280	170,847	U
		Advanced Technology Development		225,441	234,280			234,280	170,847	
83	0603884BP	Chemical and Biological Defense Program - Dem/Val	04	201,871	179,023			179,023	196,237	U
		Advanced Component Development And Prototypes		201,871	179,023			179,023	196,237	
120	0604384BP	Chemical and Biological Defense Program - EMD	05	308,791	311,071			311,071	451,306	U
		System Development And Demonstration		308,791	311,071			311,071	451,306	
152	0605384BP	Chemical and Biological Defense Program	06	116,705	92,849			92,849	92,046	U
		Management Support		116,705	92,849			92,849	92,046	
188	0607384BP	Chemical and Biological Defense (Operational Systems Development)	07	17,837	14,745			14,745	13,026	U
		Operational System Development		17,837	14,745			14,745	13,026	
Total Chemical and Biological Defense Program				1,140,215	1,105,803			1,105,803	1,201,953	

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Master Exhibit R-1

(Listing by Budget Activity, then Program Element Number)

**BA# 01: Basic Research**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
7	01	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	-	46.561	50.566	51.426	-	51.426
<b>Total: Basic Research</b>				0.000	46.561	50.566	51.426	0.000	51.426

**BA# 02: Applied Research**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
18	02	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	-	223.009	223.269	227.065	-	227.065
<b>Total: Applied Research</b>				0.000	223.009	223.269	227.065	0.000	227.065

**BA# 03: Advanced Technology Development (ATD)**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
39	03	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	-	225.441	234.280	170.847	-	170.847

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(Listing by Budget Activity, then Program Element Number)

**BA# 03: Advanced Technology Development (ATD)**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
<b>Total: Advanced Technology Development (ATD)</b>				0.000	225.441	234.280	170.847	0.000	170.847

**BA# 04: Advanced Component Development & Prototypes (ACD&P)**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
83	04	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	-	201.871	179.023	196.237	-	196.237
<b>Total: Advanced Component Development &amp; Prototypes (ACD&amp;P)</b>				0.000	201.871	179.023	196.237	0.000	196.237

**BA# 05: System Development & Demonstration (SDD)**

**Cost (\$ in Millions)**

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
120	05	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (EMD)	-	308.791	311.071	451.306	-	451.306
<b>Total: System Development &amp; Demonstration (SDD)</b>				0.000	308.791	311.071	451.306	0.000	451.306

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(Listing by Budget Activity, then Program Element Number)

**BA# 06: RDT&E Management Support**

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
152	06	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	-	101.030	92.849	92.046	-	92.046
152	06	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	-	15.675	0.000	0.000	-	0.000
<b>Total: RDT&amp;E Management Support</b>				0.000	116.705	92.849	92.046	0.000	92.046

**BA# 07: Operational Systems Development**

Cost (\$ in Millions)

Line#	BA#	PE#	PE Title	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
188	07	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	-	17.837	14.745	13.026	-	13.026
<b>Total: Operational Systems Development</b>				0.000	17.837	14.745	13.026	0.000	13.026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	46.561	50.566	51.426	-	51.426	52.351	53.294	61.076	60.242	Continuing	Continuing
IS1: <i>CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)</i>	-	1.992	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.992
LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>	-	21.924	34.563	34.646	-	34.646	34.416	32.932	40.675	39.447	Continuing	Continuing
PS1: <i>CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)</i>	-	16.419	16.003	16.780	-	16.780	17.935	20.362	20.401	20.795	Continuing	Continuing
TB1: <i>MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	-	6.226	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.226

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This Program Element supports the Joint Service basic research program for Chemical, Biological, and Radiological (CBR) defense. The objective of the basic research program is to advance fundamental knowledge and understanding of those fundamental sciences identified as having potential future impact on the Chemical and Biological Defense Program, with an emphasis in exploring new and innovative research for combating or countering chemical, biological and radiological weapons. Moreover, basic research supports a Joint Force concept of a lethal, integrated, supportable, highly mobile force with enhanced capability by the individual service member. Specifically, the program promotes theoretical and experimental research and studies in the physical, life and information sciences. A portion of this program element directly supports basic research efforts for the transformational medical technologies program. The work in this program element is consistent with the Chemical Biological Defense Program Research, Development and Acquisition (RDA) Plan. Basic research technological breakthroughs support applied research (PE 0602384BP) activities. Basic research activities described in this budget justification leverage existing research programs and activities within the DoD and other government agencies and promotes cross-pollination between government and academia, as well as sponsors promising efforts of world class scientists. The projects in this PE are placed in BA1, because they are basic research efforts directed towards non-specific or non-unique military applications. \

Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. This PE supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents." These efforts are captured in the Life Sciences project and total \$34.6M.

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

Chemical and Biological Defense Program

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>
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The Projects within this BA changed in FY13 to reflect the research areas of Life Sciences (LF1), and Physical Sciences (PS1). The previous IS1 and TB1 efforts were consolidated into LF1 and PS1.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	52.617	50.566	53.478	-	53.478
Current President's Budget	46.561	50.566	51.426	-	51.426
Total Adjustments	-6.056	0.000	-2.052	-	-2.052
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.333	0.000			
• SBIR/STTR Transfer	-0.723	0.000			
• Other Adjustments	0.000	0.000	-2.052	-	-2.052

**Change Summary Explanation**

Funding: FY12

-\$ 5.333M Reprogrammings (IS1 -\$234K; LF1 -\$2,605K; PS1 -\$1,376K; TB1 -\$1,118K)

-\$ .723M SBIR/STTR Transfers (IS1 -\$33K; LF1 -\$309K; PS1 -\$269K; TB1 -\$112K)

Schedule: N/A

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> IS1: <i>CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IS1: <i>CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)</i>	-	1.992	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.992

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (IS1) advances fundamental knowledge in mathematics, modeling, and bioinformatics. Research efforts include exploration of macro- and micro-scale meteorological effects on CB agent transport and dispersion that can lead to new and improved algorithms for hazard prediction and new CB decision support tools; and computational algorithm development of biological processes that can lead to new or improved medical countermeasures.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Information Sciences (Basic Research)	1.992	0.000	0.000
<b>Description:</b> Information Science (Basic Research) focuses on advancing knowledge of in-silico modeling techniques for both physical and physiological environments to enable a greater understanding of CB threats.			
<b>FY 2012 Accomplishments:</b> Pursued development of quantitative computational models for metabolic networks of pathogens which include interactions with host cell environments. Used computational models to help identify interactions that are candidate targets for medical countermeasures. Further exploration of these efforts will take place under Life Sciences Basic Research (LF1).			
<b>Accomplishments/Planned Programs Subtotals</b>			0.000

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	97.530	44.331	53.901		53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> IS1: <i>CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<b>Remarks</b>											

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>				<b>PROJECT</b>			
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>					PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>				LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>	-	21.924	34.563	34.646	-	34.646	34.416	32.932	40.675	39.447	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (LF1) supports research efforts in fundamental science phenomenology in microbiology, biochemistry, pathogenic mechanisms, cell and molecular biology, and immunology that are investigating molecular signatures, mechanisms of action, recognition, catalysis, and biomimetics. Efforts in Life Sciences (Basic Research) include: innovative biotechnology approaches with potential application for rapidly identifying, diagnosing, preventing, and treating disease resulting from exposure to biological or chemical agents, or from radiological exposure; biological and bio-inspired science addressing concepts such as synthetic biology, biomimetics; and other emerging areas of science to build a foundation for developing novel materials. Ultimately, knowledge gained through research in this area supports the development of medical and physical countermeasures against biological or chemical agents in areas such as diagnostics, detection, biosurveillance, protection (both physical and vaccine) and therapeutic intervention.

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Life Sciences (Basic Research)</p> <p><b>Description:</b> Life Sciences (Basic Research) focuses on fundamental efforts to investigate molecular signatures, mechanisms of action, recognition, catalysis and biomimetics, as well as agent interactions and evolution.</p> <p><b>FY 2012 Accomplishments:</b> Elucidated interactions between biological (bacterial, viral or toxin) or chemical agents and their host and host cells to understand mechanisms of pathogenesis and/or protective immunity. Examined polymicrobial interactions that may impact the growth of biological agents and/or their course of disease. Investigated immunological and physiological bases for tolerance to, or protection against, organophosphorous agents. Characterized the host response to ionizing radiation and mechanisms of injury. Studied the evolution of viral and bacterial families at the genomic and phenotypic levels and characterized molecular signatures of virulence and/or manipulation in the laboratory (e.g., genetic modification and culturing). Explored the mechanisms by which viruses modulate virulence and target host species. Investigated mechanisms behind the functionality of biological systems. Explored novel techniques for the design and synthesis of biomimetic reagents for affinity and reactivity.</p> <p><b>FY 2013 Plans:</b> Continue previous work emphasizing efforts to understand pathogens, novel threats and host responses (including human and zoonotic). Investigate and evaluate systemic biological responses following exposure of living systems to CB agents. Improve</p>	21.924	34.563	34.646

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>understanding of polymicrobial interactions influencing response to or course of disease. Exploit advances in systems biology to mine "omics" experimental designs involving agents and hosts to provide new biomarkers, targets and options. "Omics" informally refers to a field of study in biology ending in "-omics", such as genomics or proteomics. Explore materials in biotic/abiotic interface and biomimetics to enable functional molecular development (such as robust synthetic enzymes). In FY13, all research from TBMDB TMT/TB1: Transformational Medical Technologies was realigned to Life Sciences (LF1).</p> <p><b>FY 2014 Plans:</b> Continue efforts to understand pathogens, novel threats and host responses (including human and zoonotic) to prevent/minimize host injury. Investigate and evaluate systemic biological responses following exposure of living systems to CB agents. Improve 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. As an important Life Sciences issue, pursue computational infectious models that utilize experimental data to generate mathematical models of infection and immunity. Continue exploration of materials in biotic/abiotic interface and biomimetics to enable design of robust synthetic enzymes. Explore how nanostructured materials morphology relates to biological interaction and function, enabling control at the biotic/abiotic interface.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	21.924	34.563	34.646

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• TB1: <i>MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	6.226	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	6.226
• CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	97.530	44.331	53.901		53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
• TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	87.849	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	87.849
• TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>	36.695	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	36.695
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	0.935	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.935
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing
• TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>	168.684	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	168.684
• TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>	21.182	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	21.182
• TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>	1.431	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1.431

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> PS1: <i>CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
PS1: <i>CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)</i>	-	16.419	16.003	16.780	-	16.780	17.935	20.362	20.401	20.795	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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, nanomechanical resonance sensing, and nanometer 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) Physical Sciences (Basic Research)	16.419	16.003	16.780
<b>Description:</b> Physical Sciences (Basic Research) focuses on fundamental scientific phenomena including chemistry, physics, materials science, environmental science, and nanotechnology.			
<b>FY 2012 Accomplishments:</b> Explored improved surface and interfacial analytical methods for chemical and biological detection, particularly nanoscale chemical and biological sensing/detection, with the goal of more sensitive and selective recognition of molecular or surface interaction signatures. Investigated advances in materials science that might ultimately contribute to enhanced protection and improved detection capabilities. Initiated studies in the design, synthesis, and fundamental understanding of novel materials for improved filtration and decontamination of chemical or biological threats. Initiated studies in spectroscopic methods, novel detection approaches, and materials science for detecting chemical or biological threats on surfaces. Initiated studies to improve fundamental understanding of fluidic behavior at the nanoscale, as well as new spectra for potentially improved point detection capabilities. Explored potential contributions of computational chemistry and physics, including theoretical predictions of optical and terahertz (THz) signatures, to improve analytical methods and materials science.			
<b>FY 2013 Plans:</b>			

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> PS1: <i>CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>Explore development of multifunctional material design and synthesis that identifies materials that integrate functionality with durability to improve CB protection by increasing protection factors (resistance or filtration) and reducing physical burden. Create novel decontamination options (through design and synthesis of novel materials/solutions) that are more broadly applicable to multiple chemicals or biologicals with less potential to harm equipment. Seek advanced options (through both experimental and theoretical efforts) for threat identification such as new spectra of signatures (THz and more) as well as other recognition elements (e.g., fluidic behavior) that reduce the requirements for consumables or logistics while increasing specificity. Explore integration of functionality that may provide dynamic capabilities for CB defense countermeasures.</p> <p><b>FY 2014 Plans:</b> 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 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 exploring integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that sense, transduce, respond and mitigate threats.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	16.419	16.003	16.780

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	97.530	44.331	53.901		53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> TB1: <i>MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TB1: <i>MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	-	6.226	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.226

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TB1) supports basic research of vaccines, diagnostic tools, and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. Research efforts advance promising innovative biotechnology approaches with the potential to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. This project supports core science efforts that may be applied to biological defense capability areas, such as Pretreatments, Diagnostics, and Therapeutics.

This project includes basic research to support Transformational Medical Technologies (TMT) efforts. The program was launched to respond to the threat of emerging or intentionally bioengineered biological threats. Research efforts evaluate the molecular characteristics of the interaction between host and pathogen, characterize the host's response to infection/intoxication and identify common mechanisms and/or pathways. The research also studies the correlates of immunity (common response against different pathogens), and looks for pre-symptomatic bio-markers.

In FY13, all Project TB1 research efforts are re-aligned to Project LF1 - Life Sciences (Basic Research).

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Transformational Medical Technologies	6.226	0.000	0.000
<b>Description:</b> Platform Technologies are stand-alone enabling technologies that support medical countermeasures (MCM) development and when strategically aligned, provide a system of systems response capability to an adverse biological event, beginning with the identification of an unknown pathogen. The enabling technologies are divided into five platform areas: Pathogen Characterization, Target Identification, Countermeasure Discovery, Countermeasure Evaluation, and Bioinformatics.			
<b>FY 2012 Accomplishments:</b> Continued basic research efforts previously funded under the Transformational Medical Technologies Initiative. Continued to explore genetic approaches to describe host susceptibility to infectious disease and immune response. Investigated alternatives to animal models using markers of virulence, and therapeutic toxicity and efficacy. Assessed developments in technologies for potential formulation and delivery of MCMs. In FY13, all research in this area was re-aligned into Life Sciences (Basic Research) (LF1).			
<b>Accomplishments/Planned Programs Subtotals</b>	6.226	0.000	0.000

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 1: <i>Basic Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0601384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>	<b>PROJECT</b> TB1: <i>MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>	21.924	34.563	34.646		34.646	34.416	32.932	40.675	39.447	Continuing	Continuing
• TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	87.849	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	87.849
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>	168.684	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	168.684
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	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 2014 Chemical and Biological Defense Program** **DATE:** April 2013

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	223.009	223.269	227.065	-	227.065	231.152	235.312	243.548	247.460	Continuing	Continuing
CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	97.530	44.331	53.901	-	53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
NT2: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (APPLIED RESEARCH)</i>	-	0.000	60.730	75.053	-	75.053	71.749	72.932	77.542	77.805	Continuing	Continuing
TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	87.849	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	87.849
TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>	-	36.695	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	36.695
TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	-	0.000	118.208	98.111	-	98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	0.935	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.935

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

Funding under this program element (PE) sustains a robust defense program, which both reduces the danger of a Chemical, Biological, or Radiological (CBR) attack and enables U.S. forces to survive, and continue operations in a CBR environment. The medical program (was TB2, TC2, TR2, but in FY13 these continue within one 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 (MCM) (was in TB2, but it too continues in FY13 in TM2, consistent with consolidation of the medical program) 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. In the physical sciences area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection technologies, as well as biological weapon/agent

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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surveillance. NT2 consolidated all efforts related to NTAs, including medical pretreatments, therapeutics, detection, threat agent science, modeling, and protection and hazard mitigation. Research efforts are planned to be initiated for CB defense technologies that will result from a strategic approach of converging nanotechnology, biotechnology, information technology and cognitive science. The PE also provides for applied research in the areas of real-time sensing and immediate biological countermeasures.

Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. Approximately \$40.8M supports the priority to "Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events." Approximately \$28.4M supports the priority to "Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities." Approximately \$56.9M supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents."

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).

In FY13, all NTA efforts (both Medical and Non-Medical) within the PE were re-aligned to Project NT2 - Techbase Non-Traditional Agents Defense. Also in FY13, all Medical efforts formerly included in Project TB2 (Medical Biological Defense), Project TC2 (Medical Chemical Defense) and Project TR2 (Medical Radiological Defense), were re-aligned to Project TM2 (Techbase Med Defense). CB2 Physical Science Applied Research continues, and is the project in which biological threat agent surveillance (biosurveillance) research is pursued.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	219.873	223.269	208.611	-	208.611
Current President's Budget	223.009	223.269	227.065	-	227.065
Total Adjustments	3.136	0.000	18.454	-	18.454
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	6.159	0.000			
• SBIR/STTR Transfer	-3.023	0.000			
• Other Adjustments	0.000	0.000	18.454	-	18.454

**Change Summary Explanation**

Funding: Adjustments less than 10% of total program.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**  
0400: *Research, Development, Test & Evaluation, Defense-Wide*  
BA 2: *Applied Research*

**R-1 ITEM NOMENCLATURE**  
PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

Schedule: N/A

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>				<b>PROJECT</b> CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	97.530	44.331	53.901	-	53.901	55.042	59.834	66.483	66.214	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This 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 warning and reporting, hazard prediction and assessment, simulation analysis and planning, 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 also supports biological threat agent surveillance (biosurveillance). This project focuses on horizontal integration of CB defensive technologies in support of the Joint Services. This project also supports applied biosurveillance research.

Multiple projects and associated funding that had been reflected in FY12 with separate CB2 Applied Research project titles (Detection, Information Systems, Protection & Hazard Mitigation, Threat Agent Science) were re-aligned in FY13 into CB2 Techbase Non-Medical (TBNM) Physical Science Applied Research (PSAR), which pursues research on traditional agents. Further, all non-traditional agent (NTA)-dedicated research formerly in CB2 was re-aligned to Project NT2 - Techbase NTA Defense.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Detection	8.610	0.000	0.000
<b>Description:</b> Chemical and Biological Point Detection Technology: Emphasis on the detection and identification of chemical and biological threats. Objectives include the development of nanoscale detector for sensing of chemical and biological agents, design for prototype whole pathogen genome sequencing system, and development of a portable point detector for chemical warfare (CW) detection in potable water.			
<b>FY 2012 Accomplishments:</b>			

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continued concept development of nano-scale biological agent identification and sensing technologies. Continued feasibility studies of nanoscale detection systems. Continued integration studies for the Next Generation Chemical Detection (NGCD) based on micro-electromechanical systems (MEMS) components for gas chromatography (GC), Infrared (IR), and mass spectrometry (MS). Continued development of breadboard prototype for complete sequencing of entire pathogen genomes with automated sample preparation which also applies to biosurveillance. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).				
<b>Title:</b> 2) Detection NTA <b>Description:</b> Primary focus is to assess the potential of optical technologies to meet the needs to detect the presence of NTAs. <b>FY 2012 Accomplishments:</b> Continued 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. Completed designs for chemical aerosols point detection system. Initiated integration studies for chemical aerosol detection into the Next Generation Chemical Detection (NGCD) system. In FY13, all research in this area was re-aligned into Techbase Non-Traditional Agents Defense Non-Medical (Applied Research) (NT2).		12.771	0.000	0.000
<b>Title:</b> 3) Information Systems Technology <b>Description:</b> Warning and Reporting Information & Analysis: Emphasis on developing science and technologies for collaborative information management, fusion of disparate information from multiple sources, environmental databases and modeling, fusion of syndromic/diseases surveillance data, and synthetic environments for model performance evaluation and acquisition decisions. <b>FY 2012 Accomplishments:</b> Completed study on integration of biosurveillance data with disease spread models to enable early warning and reporting capabilities. Investigation included approaches and tools to automatically access, process and store biosurveillance data, architecture to search stored raw and processed biosurveillance data including adapting existing taxonomies or ontologies to facilitate interoperability, and approaches to facilitate using the architecture in near real-time to update disease spread models with new biosurveillance data. Completed advanced source term estimation (STE) and hazard refinement (HR) algorithms for use in complex environments (e.g., variable terrain, urban, water), based on results of field trial-based validation and verification (V&V) effort. Completed interior building transport and dispersion modeling effort to improve modeling of indoor-to-outdoor dispersion and to enhance the indoor modeling capabilities of advanced development programs. Continued to expand and improve data assimilation techniques for linking chemical, environmental, medical surveillance, and other disparate sensor data with computer based applications. Completed enhanced coupling between environmental parameters and advanced development programs.		5.951	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).				
<b>Title:</b> 4) Information Systems Technology  <b>Description:</b> Hazard Prediction and Information Analysis: 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 CB agents or industrial materials from CB attack or accidents.  <b>FY 2012 Accomplishments:</b> Continued development of a waterborne transport tool by beginning investigation of transport methods for biological agents and other materials as well as beginning a feasibility study of waterborne inverse species transport module. Continued to develop a high altitude post-missile intercept hazard prediction model for eventual integration into the Joint Effects Model (JEM) supplemented by small scale testing for model validation. Initiated enhancement of urban dispersion models to include source characterization/backtracking for eventual integration into the Joint Effects Model. Initiated implementation and testing of new numerical schemes for future establishment of 64-bit/multi-core capable models. Transferred high-altitude post-missile intercept, urban transport and dispersion, and 64-bit/multi-core capable model development to CB3 Modeling and Simulation (M&S) funding in FY13. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).		3.143	0.000	0.000
<b>Title:</b> 5) Information Systems Technology  <b>Description:</b> Operations Planning & Information Analysis: 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.  <b>FY 2012 Accomplishments:</b> Continued development of CB operational effects in tactical and operational level models, continued development of IM/CM tools, capabilities that leverage and integrate existing early detection and disease surveillance data for inclusion into advanced development efforts. Initiated studies on social/cultural norms for application in agent based models. Initiated study of social reaction to disease and disease mitigation strategies to support biosurveillance. Initiated development of human cognitive models that incorporate the effects of chemical biological agent interaction with other battle stressors to facilitate operational decision making. Continued operational effects research and analysis efforts. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).		4.597	0.000	0.000
<b>Title:</b> 6) Information Systems Technology		0.569	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Systems Performance Information &amp; Analysis: Develop Chemical, Biological, Radiological and Nuclear (CBRN) data sharing capabilities and simulation tools.</p> <p><b>FY 2012 Accomplishments:</b> Initiated development of an authoritative manual capturing analytical methods for evaluating the effects of chemical and biological warfare on equipment, personnel, and operations. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).</p>				
<p><b>Title:</b> 7) Information Systems Technology</p> <p><b>Description:</b> Medical &amp; Surveillance Information &amp; Analysis: Integrate existing disparate military and civilian datasets into advanced warning systems, and leverage and enhance epidemiological models and algorithms for disease prediction, 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 agent-based epidemiological modeling, medical resource estimation and decision support tools. Focus areas include health/human effects modeling including casualty estimation, agent-based epidemiological modeling and fusion of disease surveillance data.</p> <p><b>FY 2012 Accomplishments:</b> Continued effort on biosurveillance data stream evaluation and analysis. Initiated effort to devise structured expansion roadmap for agent-based epidemiological models for Outside Contiguous United States (OCONUS). Initiated research on agent-based modeling platforms and policy assessment. In FY13, all research in this area was re-aligned into Techbase Med Bio - Diagnostics (TM2).</p>		3.154	0.000	0.000
<p><b>Title:</b> 8) Information Systems Technology NTA</p> <p><b>Description:</b> Modeling &amp; Simulation for Non-Traditional Agents (NTA): 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. "Intentionally Functioning Weapons" refers to the case where a missile has released its chemical or biological payload as it was designed, rather than where the release was caused by missile interdiction. Investigate NTA agent fate for secondary effects, environmental/atmospheric chemistry, atmospheric and waterborne transport and dispersion, human effects, model validation and verification (V&amp;V), scaled testing, casualty estimation, and supporting data management.</p> <p><b>FY 2012 Accomplishments:</b> Established initial methodologies of defining NTA source terms for relevant scenarios. Began establishment of a classified database for linking NTA types to weapon system types for NTA source term modeling to be incorporated into the acquisition</p>		2.003	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
program of record (Joint Effects Model (JEM)). Expanded material file collection to include those NTAs on which there is sufficient initial data. Created initial priority list of remaining agents with data gaps. Initiated the establishment of capabilities for data collection on NTA data gaps. Initiated planning and implementation of small scale testing for NTA simulants for use in creating and verifying NTA modeling source terms, for defense against CBRN hazards. In FY13, all research in this area was re-aligned into Techbase Non-Traditional Agents Defense Non-Medical(Applied Research) (NT2).				
<b>Title:</b> 9) Protection & Hazard Mitigation <b>Description:</b> Innovative Systems Concepts and Analysis: Development and systems analysis of novel system concepts for chemical and biological protection of occupants of buildings and platforms that integrates emerging technologies. <b>FY 2012 Accomplishments:</b> Completed Innovative Systems Concepts and Analysis projects from FY10.		0.475	0.000	0.000
<b>Title:</b> 10) Protection & Hazard Mitigation <b>Description:</b> Lightweight Integrated Fabric: Development of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform. <b>FY 2012 Accomplishments:</b> Continued development work, fabrication, and testing of prototype integrated fabrics to determine protection, mechanical properties, and comfort characteristics (such as heat and water vapor transfer properties). Continued use of computational methods to assess and refine prototypes. Developed improved thermal modeling simulations. Developed and scaled an advanced adsorbent nanofiber/textile production technology and/or a "smart material" technology for possible transition to a Uniform Integrated Protective Ensemble (UIPE) program. Continued development of ensemble design conceptual work based on the lessons gathered in the human performance projects for transition to Joint Service Lightweight Integrated Suit Technology (JSLIST). In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).		2.553	0.000	0.000
<b>Title:</b> 11) Protection & Hazard Mitigation <b>Description:</b> Low-Resistance, Low-Profile Filtration: 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 (TIC). <b>FY 2012 Accomplishments:</b> Continued development of low resistance/profile filtration. Continued effort to develop the next generation novel filtration media for individual protection from CB agents and TICs (NTAs are addressed in Protection & Hazard Mitigation NTA) and transitioned		5.380	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
these media technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. Integrated metal-organic frameworks and other novel adsorbent into "system" prototypes. Integrated nanofiber high-efficiency particulate air (HEPA) filters into system prototypes. Continued reactive hybrid approaches for individual protection filtration and evaluate performance. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).				
<b>Title:</b> 12) Protection & Hazard Mitigation <b>Description:</b> Human Performance Prediction and Assessment: Analysis and modeling of human performance in chemical and biological protective ensembles in order to determine design priorities and trade-offs. <b>FY 2012 Accomplishments:</b> Finalized development of human performance prediction and assessment by investigating the interactive effects of competing burdens on human cognitive performance. Studies were conducted to quantify the cumulative effects of the two primary factors researched to date: thermal burden (via moisture vapor transport rate) and breathing resistance. Transitioned data on Human Performance Assessment that will allow the prediction and design of individual protective gear. Project was discontinued in FY13 due to availability of funding		0.667	0.000	0.000
<b>Title:</b> 13) Protection & Hazard Mitigation <b>Description:</b> Low-Burden Air Purifying Respirator: 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. <b>FY 2012 Accomplishments:</b> Continued development of a low-burden air purifying respirator. Advanced concept CBRN technologies were integrated within the confines of the Chem/Bio protection component of the Helmet Electronics and Display System - Upgradable Protection (HEADS-UP) Army Technology Objective (ATO) program, which has multi-service participation for ground applications. Various levels of comfort versus protection were integrated into prototype helmets. Work was focused on revolutionary, innovative design concepts (such as a dual-cavity respirator) in the final design in order to support decisions to initiate future helmet/mask developmental programs. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).		3.515	0.000	0.000
<b>Title:</b> 14) Protection & Hazard Mitigation		1.331	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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<p><b>Description:</b> Logistically Sustainable Air Purification for Collective Protection: Development of chemical and biological air-purification alternative technologies that minimize or eliminate the need for expendable media within acceptable size, weight and power constraints.</p> <p><b>FY 2012 Accomplishments:</b>                  Completed development of reactive membrane and regenerative post treatment media technologies for applications in building protection and vehicular/platform systems. In FY13, all research in this area was suspended at the end of FY12.</p>			
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<p><b>Title:</b> 15) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> General Purpose Formulations for Decontamination: Development and improvement of chemical and biological decontamination formulations that are compatible with the current family of decontamination systems.</p> <p><b>FY 2012 Accomplishments:</b>                  Continued focused enzymatic decontamination development. Completed study and transitioned data on agent fate of contaminated human remains and also transitioned the Human Remains Decontamination System program. In FY13, all research in this decontamination area was consolidated into the "Decontamination Family-of-Systems" effort, and placed in the Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).</p>	2.151	0.000	0.000
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<p><b>Title:</b> 16) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Decontamination Family-of-Systems (DFoS): Development and analysis of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application.</p> <p><b>FY 2012 Accomplishments:</b>                  Transitioned mature DFoS technologies including reactive coatings. Continued the optimization of decontamination applicators. Continued investigation of microwave interaction with coating embedded particles and functionalities for directed energy decontamination. Coatings efforts also examined durable and temporary coatings that pursue reactive and barrier options. Continued studies on effect of delivery and application methods on decontamination efficacy on complex surfaces. In FY13, all research in this area was re-aligned into Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).</p>	6.791	0.000	0.000
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<p><b>Title:</b> 17) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Smart Hazard Mitigation: Development of decontamination technologies that sense, respond (decontaminate) and signal in the presence of chemical and biological contamination.</p> <p><b>FY 2012 Accomplishments:</b></p>	2.035	0.000	0.000
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continued development of molecular switches that respond and react to the presence of CB agents and signal results. Continued development of rotaxane chemistry as artificial tunable G and V receptors that sense and react to chemical and biological agents. Conducted comparative analysis/technology readiness assessment of smart system candidate technologies to select candidates for further development. In FY13, all research in this area was terminated due to limited resources and was used to inform "Decontamination Family-of-Systems" in Techbase Non-Med Defense - Physical Science Applied Research (PSAR) (CB2).				
<b>Title:</b> 18) Protection and Hazard Mitigation NTA <b>Description:</b> NTA Air Purification: Study and assessment of filter technologies. <b>FY 2012 Accomplishments:</b> Continued development and testing of novel materials to improve performance against NTAs. Materials explored included crystalline nano-porous framework materials, catalytic, nano-fibrous, and composite materials. In FY13, all research in this area was re-aligned into Techbase Non-Traditional Agents Defense Non-Medical (Applied Research) (NT2).		1.158	0.000	0.000
<b>Title:</b> 19) Protection & Hazard Mitigation NTA <b>Description:</b> NTA Percutaneous Protection: Study and assessment of protective technologies. <b>FY 2012 Accomplishments:</b> Continued development of technologies to improve overall protective clothing performance against NTAs. Performed component and system modeling, in order to: (1) evaluate and utilize aerosol-based closure testing; and (2) model aerosol transport within individual protective equipment ensembles. Designed and tested novel closures in accordance with modeling results/predictions. Fabricated prototype systems and then tested/measured their aerosol performance. In FY13, all research in this area was re-aligned into Techbase Non-Traditional Agents Defense Non-Medical (Applied Research) (NT2).		2.501	0.000	0.000
<b>Title:</b> 20) Protection & Hazard Mitigation NTA <b>Description:</b> NTA Decontamination: Study and assessment of decontamination technologies. <b>FY 2012 Accomplishments:</b> Continued development of decontamination technologies against NTAs. Continued to develop decontamination technologies and formulations that are optimized against NTAs. Continued development and test decontamination formulations and system-of-systems approaches that improve performance against NTAs and manage process residuals, including effluent control. Continued development of durable and temporary, reactive and barrier coatings to mitigate NTA contamination. In FY13, all research in this area is re-aligned into Techbase Non-Traditional Agents Defense Non-Medical (Applied Research) (NT2).		2.302	0.000	0.000
<b>Title:</b> 21) Physical Science Applied Research (PSAR)		0.000	10.796	10.508

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Chemical and Biological Point Detection Technology: Emphasis on the detection and identification of chemical and biological threats. Objectives include the development of nanoscale detector for sensing of chemical and biological agents, design for prototype whole pathogen genome sequencing system, and development of a portable point detector for chemical warfare (CW) detection in potable water.</p> <p><b>FY 2013 Plans:</b> Complete concept development of nano-scale biological agent identification and sensing technologies. Complete feasibility studies of nanoscale detection systems. Continue integration studies for Next Generation Chemical Detection (NGCD) based on Microelectromechanical System (MEMS) components for gas chromatography (GC) and mass spectrometry (MS). Complete development of breadboard prototype for complete sequencing entire pathogen genomes with automated sample preparation which also applies to biosurveillance. Continue algorithm development to increase range capabilities, reduce false positives, and provide decision capabilities for large data sets. Funding for this research area was re-aligned from Tech Base Non-Med - Detection (CB2).</p> <p><b>FY 2014 Plans:</b> Continue integration studies for NGCD based on MEMS components for GC and MS. Continue algorithm development to increase range capabilities, reduce false positives, and provide decision capabilities for large data sets.</p>				
<p><b>Title:</b> 22) Physical Science Applied Research (PSAR)</p> <p><b>Description:</b> Threat Agent Science: Supports defensive countermeasure development against current and new 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. Funding for this research was re-aligned from Tech Base Non-Med - Threat Agent Science (CB2).</p> <p><b>FY 2013 Plans:</b> Develop a systems approach to toxicological understanding of physiological injury by threat agents. Determine infectious dose of biological agents of interest and potential emergent threats from reservoir hosts or other technological breakthroughs such as Do-it-Yourself (DIY) biology. DIY biology is a growing movement in which individuals or sometimes small informal organizations, change the genetics of life forms using small resources and often with little or no formal training, oversight by professionals, or regulation by governments. Continue investigations that describe fundamental mechanisms that contribute to BWA persistence and transport. Define particle properties and predict aerosolization behavior to inform hazard assessment. Study emerging technological breakthroughs such as DIY biology that may impact novel threat emergence. Study agent modulation in natural or</p>		0.000	2.469	1.196

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
laboratory environments to inform forensic examination of threats. Funding for this research area was re-aligned from Tech Base Non-Med - Threat Agent Science (CB2).  <b>FY 2014 Plans:</b> Continue investigations that describe fundamental mechanisms that contribute to BWA persistence and transport in the environment. Define particle properties and predict aerosolization behavior to inform hazard assessment. Study biological modulation in natural or laboratory environments through genetic drift to inform forensic examination of threats.			
<b>Title:</b> 23) Physical Science Applied Research (PSAR)  <b>Description:</b> Hazard Prediction: 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 CB agents or industrial materials from CB or accidents.  <b>FY 2013 Plans:</b> Complete development of a waterborne transport tool investigation of transport methods for biological agents and other materials. Initiate development of waterborne inverse species transport module based on feasibility study results. Funding for this research area was re-aligned from Tech Base Non-Med - Modeling & Simulation (CB2). In FY14, the Virtual Testing and Evaluation testbed being developed in the Warning & Reporting area will now be consolidated under this Hazard Prediction.  <b>FY 2014 Plans:</b> Continue development of waterborne inverse species transport modeling capability in conjunction with completion of the validation and verification effort for waterborne transport models. Initiate final work on advancing the urban modeling capability and optimizing the urban sub-system for interfacing transport models of varying fidelity and speed. Continue development of a generalized Virtual Testing and Evaluation testbed for evaluating/stressing source characterization and hazard refinement techniques, under a wide range of operational conditions.	0.000	1.983	2.974
<b>Title:</b> 24) Physical Science Applied Research (PSAR)  <b>Description:</b> Operational Effects & Planning: 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.  <b>FY 2013 Plans:</b> Continue studies on social/cultural norms for application in agent based models. Continue study of social reaction to disease and disease mitigation strategies to support biosurveillance. Continue development of human cognitive models that incorporate the effects of chemical biological agent interaction with other battle stressors to facilitate operational decision making. Initiate special population analysis to model emerging disease and the effects of targeted countermeasures. Continue operational	0.000	2.371	2.863

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>effects research and analysis efforts. Funding for this research area was re-aligned from Tech Base Non-Med - Modeling &amp; Simulation (CB2). In FY14 all biosurveillance work in TBNM PSAR/CB2 will be consolidated under the Biosurveillance (BSV)/ Disease Surveillance area. In addition, in FY14 System Performance Models being developed in the Data Analysis area will be consolidated into this Operational Effects &amp; Planning area.</p> <p><b>FY 2014 Plans:</b> 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. Continue system performance model integration and advanced development for program-wide exploitation.</p>			
<p><b>Title:</b> 25) Physical Science Applied Research (PSAR)</p> <p><b>Description:</b> Data Analysis: Develop CBRN data sharing capabilities and simulation tools.</p> <p><b>FY 2013 Plans:</b> Continue to develop 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. Conclude development of initial versions of systems performance models in collective protection, individual protection, contamination avoidance and decontamination. Initiate system performance model integration and advanced development for program-wide exploitation. Funding for this research area was re-aligned from Tech Base Non-Med - Modeling &amp; Simulation (CB2). In FY14 all Systems Performance Model development will be consolidated under the Operational Effects &amp; Planning area. In addition, in FY14 the time-varying toxic industrial studies will be consolidated under this Data Analysis area.</p> <p><b>FY 2014 Plans:</b> Develop additional 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. Complete study on animal and human effects from time-varying toxic industrial chemical concentration exposures</p>	0.000	1.490	1.451
<p><b>Title:</b> 26) Physical Science Applied Research (PSAR)</p> <p><b>Description:</b> Warning and Reporting Information &amp; Analysis: Emphasis on developing science and technologies for collaborative information management, fusion of disparate information from multiple sources, environmental databases and modeling, fusion of syndromic/diseases surveillance data, and synthetic environments for model performance evaluation and acquisition decisions.</p> <p><b>FY 2013 Plans:</b> Initiate study on animal and human effects from time-varying toxic industrial chemical concentration exposures. Initiate development of a generalized Virtual Testing and Evaluation testbed for evaluating/stressing source characterization and hazard refinement techniques, under a wide range of operational conditions. Initiate interior building transport and dispersion</p>	0.000	2.333	0.000

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
modeling effort to improve modeling of indoor-to-outdoor dispersion and to enhance the indoor modeling capabilities of advanced development programs. Continue study on integration of biosurveillance data with disease spread models to enable early warning and reporting capabilities, performing R&D to improve performance of novel data assimilation algorithm used to integrate global biosurveillance data. Funding for this research area was re-aligned from Tech Base Non-Med - Modeling & Simulation (CB2). In FY14, development previously supported by this area will be moved into the Operational Effects & Planning and Hazard Prediction areas.				
<p><b>Title:</b> 27) Physical Science Applied Research (PSAR)</p> <p><b>Description:</b> Protection &amp; Hazard Mitigation - Lightweight Integrated Fabric: Development of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform.</p> <p><b>FY 2013 Plans:</b> Complete initial development work, fabrication, and testing of prototype integrated fabrics to determine protection, mechanical properties, and comfort characteristics (such as heat and water vapor transfer properties). Continue use of computational methods to assess and refine future prototypes. Continue improved thermal modeling simulations. Continue to develop new low burden fabrics and ensemble designs to support the Uniform Integrated Protection Ensemble/Joint Service Lightweight Integrated Suit Technology (UIPE/JSLIST) programs. Continue 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. FY13 funding for this research area was re-aligned from Tech Base Non-Med protection and Hazard Mitigation (CB2).</p> <p><b>FY 2014 Plans:</b> Continue to develop new low burden fabrics and ensemble designs to support the UIPE/JSLIST programs with a focus on whole system assessments. Continue 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. Continue 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. Continue exploring integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that sense, transduce, respond and mitigate threats.</p>		0.000	5.225	6.319
<p><b>Title:</b> 28) Physical Science Applied Research (PSAR)</p> <p><b>Description:</b> Protection &amp; Hazard Mitigation - Low-Resistance, Low-Profile Filtration: 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>		0.000	5.211	3.594

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b><i>FY 2013 Plans:</i></b> Continue development of next generation filtration technology. Continue focus on low resistance/low profile novel filter media with augmented performance against TICs and chemical agents. Continue to replace legacy filter media with novel media that offers broad spectrum protection. Continue with technology areas to include: metal organic frameworks, novel adsorbents and reactive hybrids. Funding for this research area was re-aligned from Tech Base Non-Med - Protection and Hazard Mitigation (CB2).</p> <p><b><i>FY 2014 Plans:</i></b> Continue development of next generation filtration technology. Continue focus on low resistance/low profile novel filter media with augmented performance against TICs and chemical agents. Continue to replace legacy filter media with novel media that offers broad spectrum protection. Continue with technology areas to include: metal organic frameworks, novel adsorbents and reactive hybrids and transition these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs.</p>				
<p><b><i>Title:</i></b> 29) Physical Science Applied Research (PSAR)</p> <p><b><i>Description:</i></b> Protection &amp; Hazard Mitigation - Low-Burden Air Purifying Respirator: 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.</p> <p><b><i>FY 2013 Plans:</i></b> Continue development of next generation low burden respirator technology. Develop and integrate novel seal, anti-fogging, and dual cavity technologies. Develop and verify methods for a Respiratory Battlefield Evaluation System (RBEs). Funding for this research area was re-aligned from Tech Base Non-Med - Protection and Hazard Mitigation (CB2).</p> <p><b><i>FY 2014 Plans:</i></b> Continue development of next generation low burden respirator technology. Develop and integrate novel seal, anti-fogging, and dual cavity technologies. Develop and verify methods for RBEs. Develop a scalable respirator technology to quickly configure to different protective capabilities from air purifying respirator (APR) to self-contained breathing apparatus (SCBA).</p>		0.000	3.237	2.111
<p><b><i>Title:</i></b> 30) Physical Science Applied Research (PSAR)</p> <p><b><i>Description:</i></b> Protection &amp; Hazard Mitigation - Decontamination Family-of-Systems (DFoS): Development and analysis of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application.</p> <p><b><i>FY 2013 Plans:</i></b></p>		0.000	9.216	11.676

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>Continue the development of new formulations adjusted for agent, material substrate, and environment; combine with optimized application systems and initiate additional efforts based on the results of the dial-a-decon analysis of alternatives. Continue coatings efforts to examine durable and temporary coatings that pursue reactive and barrier options and initiate efforts based on the results of the coatings analysis of alternatives. Continue development of delivery and application methods on decontamination efficacy on complex surfaces. Continue to develop decontamination assurance sprays for biological agents and other agents of interest. Continue development of enzymes for sensitive equipment/platform decon (previously under General Purpose Formulations in FY12). Initiate radiological/nuclear decontamination/hazard mitigation effort. Funding for this research area was re-aligned from Tech Base Non-Med - Protection and Hazard Mitigation(CB2).</p> <p><b>FY 2014 Plans:</b> Continue the development of new formulations adjusted for agent, material substrate, and environment; combine with optimized application systems and initiate additional efforts based on the results of the dial-a-decon analysis of alternatives. Continue coatings efforts to examine durable and temporary coatings that pursue reactive and barrier options and initiate efforts based on the results of the coatings analysis of alternatives. Continue development of delivery and application methods on decontamination efficacy on complex surfaces. Continue to develop decontamination assurance sprays for biological agents and other agents of interest. Continue development of enzymes for sensitive equipment/platform decon (previously under General Purpose Formulations in FY12). Initiate radiological/nuclear decontamination/hazard mitigation effort. Investigate technologies to decontaminate spores over a wide area, approaches include looking at germinants paired lytic enzymes, directed energy, and predatory nematodes. Demonstrate the ability of technologies to decontaminate spores in complex, dirty environments.</p>			
<p><b>Title:</b> 31) Physical Science Applied Research</p> <p><b>Description:</b> Biosurveillance (BSV)/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, 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 agent-based epidemiological modeling, medical resource estimation and decision support tools. Focus on agent-based epidemiological modeling and fusion of disease surveillance data.</p> <p><b>FY 2014 Plans:</b> Continue efforts in FY13 from Diagnostics and Disease Surveillance (TM2 Bio). Complete 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 BSV Ecosystem effort. Complete effort to devise structured outside continental U.S. (OCONUS) expansion roadmap for agent-based epidemiological models and continue to increase OCONUS analytic capability through targeted areas. Leverage this research for BSV Ecosystem effort. Advance research into data integration platforms through the BSV Ecosystem effort. Develop approaches for unique and emerging data collection, aggregation and provision of human, vector and animal/zoonotic</p>	0.000	0.000	11.209

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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health surveillance data. Develop 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. Leverage 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. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TM2).

<p><b>Title:</b> 32) Threat Agent Science</p> <p><b>Description:</b> Physiological Response: Delivers 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 supports developing and/or enhancing both operational risk and exposure guidelines; limits for detection and protection; goals for decontamination; and medical countermeasures.</p> <p><b>FY 2012 Accomplishments:</b> Improved understanding of bioavailability following dermal exposures for chemical agents, as well as studied in vitro and in vivo binding of agents and analogues.</p>	1.497	0.000	0.000
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<p><b>Title:</b> 33) Threat Agent Science</p> <p><b>Description:</b> Agent Characterization: Examines critical characteristics of chemical and biological warfare agents (CWAs and BWAs), beginning with physiochemical properties and subsequently determining the challenge levels to military personnel in operationally relevant environments that provides key information to development or improvement of both physical and medical countermeasures and decision support tools. Research focuses on: characterizing the realistic threat posed by CWA and BWA aerosol and particulate agent dissemination; examining the fundamental mechanisms that contribute to BWAs persistence and transport; understanding the fundamental interactions between CWA and BWA agents and substrates; investigating aqueous transport of CWA and BWA agents and the underlying mechanisms of binding CB agents onto hydrated surfaces; and identifying agent decomposition products harmful to military personnel. In FY12, this area included research formerly performed under Agent Fate.</p> <p><b>FY 2012 Accomplishments:</b> Expanded investigations of fundamental mechanisms that contribute to BWA persistence and transport; transfer information from previous studies to operational models. Identified markers of cultured versus naturally occurring agents, as well as markers of persistence of biological agents. Continued to support test and evaluation needs for both CWA and BWA simulants. Characterized environmental factors affecting persistence and binding to environmental elements such as soil. Advanced the understanding of fundamental interactions between agents and substrates in order to improve predictive modeling supporting</p>	2.672	0.000	0.000
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
other capability areas, such as detection and hazard mitigation. In FY13, all research in this area was re-aligned to CB2 Physical Sciences Applied Research (PSAR).			
<b>Title:</b> 34) Threat Agent Science NTA	21.704	0.000	0.000
<b>Description:</b> Threat Agent Science NTA: Provides enabling science and technology which informs development and testing of NTA defense technology such as detection, decontamination, protection, hazard assessment, and more. This preliminary assessment provides the basis for all countermeasure development and assessment.			
<b>FY 2012 Accomplishments:</b> Continued efforts from FY11, working through the list of priority agents. Provided necessary operational and residual contact hazards as well as aerosol and percutaneous toxicity standards for NTAs. Delivered prioritized fundamental analysis, including physicochemical properties such as volatility, solubility, mass transport, reactivity, stability and other factors. Examined physical parameters governing NTA stability on operational materials. In FY13, all NTA-dedicated Research was re-aligned to Non-Medical Techbase Non-Traditional Agents Defense Non-Medical(Applied Research) (NT2).			
<b>Accomplishments/Planned Programs Subtotals</b>	97.530	44.331	53.901

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
N/A

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
NT2: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (APPLIED RESEARCH)</i>	-	0.000	60.730	75.053	-	75.053	71.749	72.932	77.542	77.805	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This 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, 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 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Techbase Medical Defense - NTA</p> <p><b>Description:</b> Chemical Medical Pretreatments NTA: 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><b>FY 2013 Plans:</b> Chemical Medical Pretreatments NTA: Develops pretreatments that provide protection against non-traditional agents. Products should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high catalytic efficiency.</p> <p><b>FY 2014 Plans:</b> Continue studies to determine efficacy of catalytic bioscavenger for NTA exposure. Pursue development of small molecule pretreatments against NTA exposure.</p>	0.000	3.371	6.992
<p><b>Title:</b> 2) Techbase Medical Defense - NTA</p> <p><b>Description:</b> Chemical Medical Therapeutics NTA: 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</p>	0.000	13.050	18.618

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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).  <b>FY 2013 Plans:</b> Continue efforts originating in FY12 in Chemical Therapeutics NTA (TC2 NTA). Initiate investigation of other compounds of interest including mechanism of action and toxicity, and initiate search for effective countermeasures. Funding for this research area was re-aligned from Tech Base Med Defense - Med Chem Therapeutics NTA (TC2).  <b>FY 2014 Plans:</b> Continue investigation of advanced and emerging threats including mechanism of action and toxicity, and continue search for effective countermeasures. Develop centrally active novel therapeutic compounds that cross the blood brain barrier. Screen currently licensed Food and Drug Administration (FDA) approved countermeasures to determine potential efficacy against other classes of NTAs. Pursue absorption, distribution, metabolism and excretion studies to further elucidate agent effects.			
<b>Title:</b> 3) Techbase Medical Defense - NTA  <b>Description:</b> Chemical Medical Diagnostics NTA: 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. Non-NTA Chem Diagnostics support the analytics for traditional agent diagnostics and hand-held diagnostic technologies that might be applied to NTA diagnostics.  <b>FY 2013 Plans:</b> Continue to identify biomarkers to create an enhanced capability to pre-symptomatically diagnose NTA exposure. Continue method development for identification and validation of NTAs in clinical samples for additional compounds of interest. Funding for this research area was re-aligned from Tech Base Med Defense - Med Chem Diagnostics NTA (TC2).  <b>FY 2014 Plans:</b> Continue to identify biomarkers to create an enhanced capability to pre-symptomatically diagnose NTA exposure. Continue method development for identification and validation of NTAs in clinical samples for additional compounds of interest.	0.000	0.386	2.344
<b>Title:</b> 4) Techbase Non-Med NTA  <b>Description:</b> Detection NTA: Primary focus is to assess the potential of optical technologies to meet the needs to detect the presence of NTAs.  <b>FY 2013 Plans:</b>	0.000	11.580	15.686

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete and demonstrate feasibility development of plant sentinel concept. Continue development from technology concepts and models to meet the needs to detect contamination on surfaces in pre- and post-decontamination application. Continue integration studies for chemical aerosol detection into the Next Generation Chemical Detection (NGCD). Funding for this research area was re-aligned from Tech Base Non-Med Defense - Detection NTA (CB2).  <b><i>FY 2014 Plans:</i></b> Continue development from technology concepts and models to meet the needs to detect contamination on surfaces in pre and post decontamination application. Continue integration studies for chemical aerosol detection into the NGCD.			
<b><i>Title:</i></b> 5) Techbase Non-Med NTA  <b><i>Description:</i></b> Threat Agent Science NTA: Provide enabling science and technology on 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 provides the basis for all countermeasure development and assessment.  <b><i>FY 2013 Plans:</i></b> Expand assessment of novel threats into new classes of agents providing operationally relevant exposure limits using an integrated systems toxicology approach. Define critical physical/chemical properties and characterize/predict agent reactivity and interaction with environmental substrates. Provide supportable data to enable countermeasure development and testing as well as inform concept of operations policy, doctrine and procedure. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Threat Agent Science NTA (CB2).  <b><i>FY 2014 Plans:</i></b> Continue assessment of priority classes of novel threat agents providing operationally relevant exposure limits using an integrated systems toxicology approach. Define critical physical/chemical properties and characterize/predict agent reactivity and interaction with environmental substrates. Provide supportable knowledge, enabling countermeasure development and testing and informing concept of operations policy, doctrine and procedure. Move towards in-silico efforts to characterize threat agents.	0.000	26.261	25.297
<b><i>Title:</i></b> 6) Techbase Non-Med NTA  <b><i>Description:</i></b> Modeling & Simulation NTA: 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. "Intentionally Functioning Weapons" refers to the case where a missile has released its chemical or biological payload as it was designed, rather than where the release was caused by our missile interdiction. 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.	0.000	1.464	1.369

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>FY 2013 Plans:</b> Continue with actual experimentation involving small scale testing for NTA simulants for use in creating and verifying NTA modeling source terms, for defense against CBRN hazards. Continue to develop NTA source term models. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Modeling &amp; Simulation NTA (CB2).</p> <p><b>FY 2014 Plans:</b> Complete experimentation phase of small scale testing for NTA simulants for use in creating and verifying NTA modeling source terms, for defense against CBRN hazards. Continue to develop new NTA source term scenario models and flexible scenario NTA source models.</p>			
<p><b>Title:</b> 7) Techbase Non-Med NTA</p> <p><b>Description:</b> Protection and Hazard Mitigation NTA - Air Purification: Study and assessment of filter technologies.</p> <p><b>FY 2013 Plans:</b> Continue development and testing of novel materials to improve performance against NTAs. Replace legacy filter media with novel media that offers broad spectrum NTA protection. Continue with technology areas that include: crystalline nano-porous framework materials, novel adsorbents, catalytic, nano-fibrous, composite materials and reactive hybrids. Transition these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection &amp; Hazard Mitigation NTA (CB2).</p> <p><b>FY 2014 Plans:</b> Continue development and testing of novel materials to improve performance against NTAs. Replace legacy filter media with novel media that offers broad spectrum NTA protection. Continue with technology areas that include: crystalline nano-porous framework materials, novel adsorbents, catalytic, nano-fibrous, composite materials and reactive hybrids. Transition these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs.</p>	0.000	1.262	1.290
<p><b>Title:</b> 8) Techbase Non-Med NTA</p> <p><b>Description:</b> Protection &amp; Hazard Mitigation NTA - Percutaneous Protection: Study and assessment of protective technologies.</p> <p><b>FY 2013 Plans:</b> Continue development of low burden technologies to improve overall protective clothing performance against NTAs leading toward verification, demonstration and transition. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection &amp; Hazard Mitigation NTA (CB2).</p> <p><b>FY 2014 Plans:</b></p>	0.000	2.084	2.001

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue development of low burden technologies to improve overall protective clothing performance against NTAs leading toward verification, demonstration and transition.			
<b>Title:</b> 9) Techbase Non-Med NTA <b>Description:</b> Protection & Hazard Mitigation NTA - Decontamination: Study and assessment of decontamination technologies. <b>FY 2013 Plans:</b> Continue development of decontamination technologies against NTAs. Continue to develop decontamination technologies and formulations that are optimized against NTAs. Continue to develop, demonstrate, and transition enzyme technology for low-impact decon of NTAs. Continue to integrate with the Decontamination Family-of-Systems effort. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection & Hazard Mitigation NTA (CB2). <b>FY 2014 Plans:</b> Continue development of decontamination technologies against NTAs. Continue to develop decontamination technologies and formulations that are optimized against NTAs. Continue to develop, demonstrate, and transition enzyme technology for low-impact decon of NTAs. Continue to integrate with the Decontamination Family-of-Systems effort.	0.000	1.272	1.081
<b>Title:</b> 10) Techbase Non-Med NTA <b>Description:</b> Protection & Hazard Mitigation NTA - Low-Burden Air Purifying Respirator: 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. <b>FY 2014 Plans:</b> Develop and integrate novel seal, anti-fogging, and dual cavity technologies to protect against NTAs.	0.000	0.000	0.375
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	60.730	75.053

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>	0.000	31.916	23.333		23.333	29.248	30.727	37.728	40.975	Continuing	Continuing
<b>Remarks</b>											

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**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
N/A

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	87.849	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	87.849

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TB2) funds applied research on vaccines, therapeutic drugs, and diagnostic capabilities to provide effective medical defense against validated biological threat agents or emerging infectious disease threats including bacteria, toxins, and viruses. Innovative biotechnology approaches will be incorporated to advance medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project include core science efforts in biological defense capability areas, such as Pretreatments, Diagnostics, and Therapeutics. 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 biological agents.

This project includes the Transformational Medical Technologies Initiative (TMTI), (funded as the Transformational Medical Technologies (TMT) program in FY12). The program was launched to respond to the threat of emerging or intentionally engineered biological threats. TMT's mission is to protect the Warfighter from genetically engineered biological threats by providing a rapid response capability from identification of pathogens to the delivery of medical countermeasures. This mission is accomplished through two main efforts: 1) developing broad spectrum (multi-agent) therapeutics against biological agents (e.g. one drug that treats multiple agents); and 2) developing platform technologies to assist in the rapid development of medical countermeasures (MCMs) in response to biological agents (e.g. developing new and innovative ways to mass produce drugs in the event of a biological incident).

The Medical Countermeasures Initiative (MCMI) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, based on partnerships between the government and industry, providing a dedicated, cost-effective, reliable, and sustainable MCM process that meets the Warfighter and national security needs. Specifically, the MCMI will provide the capability for the advanced development and flexible manufacturing of biological MCM (to include TMT developed MCMs) to address CBRN threats, including novel and previously unrecognized, naturally-occurring emerging infectious diseases. MCMI efforts within S&T are concentrated in two areas: 1) advancement of regulatory science, and 2) advancements in flexible manufacturing technologies for MCMs.

In FY13, all Project TB2 research is re-aligned into Project TM2 - Techbase Medical Defense.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Medical Countermeasures Initiative (MCMI)	11.985	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Medical Countermeasures Initiative (MCM): Coordinate inter-related advanced development and flexible manufacturing capabilities, based on partnerships between the government and industry, providing a dedicated, cost-effective, reliable, and sustainable MCM process that meets the needs of the Warfighter and national security. Specifically, the MCM provides a capability for the advanced development and flexible manufacturing of biological MCM (including TMT developed MCMs) to address CBRN threats, including novel and previously unrecognized, naturally-occurring emergent infectious diseases. MCM efforts within S&amp;T are concentrated in advancing two areas: 1) regulatory science and 2) flexible manufacturing technologies for MCMs.</p> <p><b>FY 2012 Accomplishments:</b> Conducted studies to explore increasing the efficiency, responsiveness, and speed of biopharmaceutical manufacturing through use of more flexible, non-traditional host-vector systems. Initiated and refined development of multi-product/multi-use platform technologies for flexible manufacturing processes for MCMs. Evaluated and exploited the regulatory advantages of such systems, with the intent that regulatory approval of the platform for one product will simplify subsequent approvals of other products based on the same system. In FY13, all research in this area was re-aligned into Techbase Med Defense - Medical Countermeasures Initiative (TM2).</p>				
<p><b>Title:</b> 2) Diagnostics (Biosurveillance)</p> <p><b>Description:</b> Diagnostic Technologies: Development and verification of rapid, sensitive, and specific tests for the identification of Biological Warfare Agents (BWAs) and their expressed pathogens or toxins in clinical specimens from Warfighters for the diagnosis of exposure/infection. Discovery of biomarkers of response to exposure. Evaluation of next generation diagnostic technologies including portable instrument platforms, highly parallel and informative testing formats, and nanotechnology applications.</p> <p><b>FY 2012 Accomplishments:</b> Verified performance of informative genetic and affinity probes and optimized number of probes required to capture predictive signature coverage. Verified performance of pre-symptomatic diagnostic biomarker panels in blinded BWA and emerging threat pathogen-exposed animal samples. Developed pan-emerging threat agent genotyping assay for fieldable sequence-based genetic analyzer to supplement/replace strain-specific assays. In FY13, all research in this area was re-aligned into Techbase Med Defense - Diagnostics (TM2).</p>		15.846	0.000	0.000
<p><b>Title:</b> 3) Pretreatments</p> <p><b>Description:</b> Bacterial/Toxins Vaccines: Generate novel or improved vaccines against bacterial and toxin biothreat agents, and demonstrate preliminary efficacy in small animal models. Identify correlates of protective immunity in animal models.</p>		5.505	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b><i>FY 2012 Accomplishments:</i></b> Identified correlates of immunity, elicited by Burkholderia species vaccine candidates, which predict vaccine efficacy. In a concurrent effort, opened investigative avenues in search of vaccine candidates directed against Burkholderia species. Continued efforts designed to examine the efficacy of adjuvants co-administered with existing vaccine candidates against Burkholderia species. Continued efforts to boost immune response to the currently licensed anthrax vaccine using novel adjuvants which might have applicability to other vaccine candidates in the future. Additionally, research continued to produce vaccine candidates designed to protect against emerging or genetically engineered anthrax strains. Examined the efficacy of rationally designed, next-generation Type A Francisella tularensis vaccine against aerosol challenge in rat and non-human primate models. Continued research designed to evaluate outer membrane proteins isolated from Type A Francisella tularensis as vaccine candidates against aerosol challenge with the pathogen in small and large animal models. In FY13, all research in this area was re-aligned to Techbase Med Defense - Bio CM (TM2).</p>			
<p><b><i>Title:</i></b> 4) Pretreatments</p> <p><b><i>Description:</i></b> Vaccine Platforms and Research Tools: Design novel multi-agent vaccine platforms capable of expressing multiple antigens, investigate the ability of non-specific stimulators of immunity to enhance the effectiveness of newly generated vaccines, characterize alternative vaccine delivery (needle-free) methods and novel vaccine stabilization methodologies, and conduct studies to further advance a laboratory-based, human artificial immune system to render it capable of predicting the human immune response to biodefense vaccines under development.</p> <p><b><i>FY 2012 Accomplishments:</i></b> Continued development of new platform technologies that support the presentation of multiple antigens to the immune system. Developed relevant animal models for the evaluation of the immune response to multi-antigen platforms. Continued development of alternative methodologies for vaccine delivery (i.e., electroporation) via intra-muscular or intra-dermal administration. Continued to advance the surrogate human immune system, Modular Immune In Vitro Construct (MIMIC), which provides an in vitro assessment of the human immune response. Completed studies to assess the cross-reactivity of antigens present in different Filoviruses and Alphaviruses. Used MIMIC to define human correlates of immunity in responses to various bio-threat agents. Continued to develop methodologies which remove the need for cold storage and transport for vaccines and renders them stable in variable and extreme temperatures. In FY13, all research in this area was re-aligned to Techbase Med Defense - Bio CM (TM2).</p>	5.667	0.000	0.000
<p><b><i>Title:</i></b> 5) Therapeutics</p> <p><b><i>Description:</i></b> Viral Therapeutics: Identify, optimize and evaluate lead candidate therapeutics for efficacy against viral pathogens.</p> <p><b><i>FY 2012 Accomplishments:</i></b></p>	2.040	0.000	0.000

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Initiated efforts to evaluate and develop antibody-based therapeutics to treat Filovirus infections. Began and continued efforts to identify and evaluate novel broad-spectrum host and pathogen-directed small molecule therapeutics for Biothreat Viruses (i.e. Filovirus, Flavivirus, Arenavirus, Bunyavirus). Optimized therapeutic inhibitors of host and viral tyrosine phosphatases for Orthopoxvirus infection. In FY13 all research in this area was re-aligned to Techbase Med Defense-Bio CM (TM2).</p> <p><b>Title:</b> 6) Therapeutics</p> <p><b>Description:</b> Bacterial Therapeutics: Identify, optimize and evaluate lead therapeutic candidates effective against designated bacterial threat agents.</p> <p><b>FY 2012 Accomplishments:</b> Expanded FDA approved drug screening program for Burkholderia, Francisella tularensis and determined in vitro susceptibilities. Continued evaluation of novel compounds against bacterial biological warfare agents. Optimized lead series of MurB compounds targeting cell wall biosynthesis. Determined synergy between MurB antibacterial agents and conventional antibiotics against B. anthracis and Y. pestis. Identified and validated compounds that inhibit bacterial SOS induction thereby potentiating the effects of FDA approved drugs. Selected a second FDA approved drug to focus on for Burkholderia and F. Tularensis. In FY13, all research in this area was re-aligned to Techbase Med Defense-Bio CM (TM2).</p>	6.789	0.000	0.000
<p><b>Title:</b> 7) Therapeutics</p> <p><b>Description:</b> Toxin Therapeutics: Identify, optimize and evaluate therapeutic candidates that are effective against biological toxin agents.</p> <p><b>FY 2012 Accomplishments:</b> Validated host proteins responsible for BoNT light-chain stabilization. Continued co-crystallization studies of BoNT-inhibitor complexes. Characterized host proteins that interact with BoNT and identified small molecule inhibitors preventing host-toxin interactions. Validated differential expression of host genes involved in neuron response to BoNT intoxication. Identified and developed therapies that target host proteins involved in BoNT persistence in the neuron. Validated host proteins involved in ricin dislocation as potential drug targets. Continued development of small molecule inhibitors to toxin threat agents (BoNT, ricin, and staphylococcal enterotoxin B). In FY13, all research in this area was re-aligned to Techbase Med Defense-Bio CM (TM2).</p>	8.465	0.000	0.000
<p><b>Title:</b> 8) Transformational Medical Technologies</p> <p><b>Description:</b> Development of Platform Technologies: Continues efforts previously funded under the Transformational Medical Technologies Initiative. Platform Technologies are standalone enabling technologies that support MCM development and when strategically aligned, provide a system of systems response capability to an adverse biological event - from the identification of an unknown pathogen to the development of an approved countermeasure ready for delivery to the Warfighter and the nation. The enabling technologies are divided into five platform areas: Pathogen Characterization, Target Identification, Countermeasure</p>	14.761	0.000	0.000

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>Discovery, Countermeasure Evaluation, and Bioinformatics. Applied research efforts include the maturation of the components necessary to develop an integrated capability from pathogen identification and characterization to countermeasure delivery. Off-the-shelf technologies will be identified, evaluated, and where applicable, refined to demonstrate the ability to provide drug development capabilities.</p> <p><b>FY 2012 Accomplishments:</b> Invested to further develop host and pathogen based platforms to higher levels of maturity and funded Biosurveillance indications and warnings of a fused nature in accordance with the Platform Technologies objectives of pathogen characterization, target identification, and bioinformatics. Continued to mature pathogen identification and characterization capabilities, including genetic sequencing, integrate existing capabilities. Continued to develop genetic sequencing and analysis technologies to characterize advanced threats. Continued integration of leading edge technologies with existing technologies to enhance pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation platform areas. In FY13 all research in this area was re-aligned to Techbase Med Defense - Diagnostics (TM2).</p>			
<p><b>Title:</b> 9) Transformational Medical Technologies</p> <p><b>Description:</b> Multiagent (Broad Spectrum) Medical Countermeasures (MCM): Continues efforts previously funded under the Transformational Medical Technologies Initiative. It supports existing and new efforts in the drug discovery phase of drug development. Applied research efforts also include the investigation of existing drugs to explore their efficacy against BW agents. This involves the initiation of experiments to identify markers, correlates of protection, assays, and endpoints for further non-clinical and clinical studies and development of a scalable and reproducible manufacturing process amenable to Food and Drug Administration (FDA) Good Manufacturing Practices (GMP).</p> <p><b>FY 2012 Accomplishments:</b> Supported new MCM discovery efforts to refresh the Hemorrhagic Fever Virus (HFV) and Intracellular Bacterial Pathogen (IBP) product pipelines. Continued to identify and initiate the development of intervention strategies targeting host response to biological pathogens, inclusive of enhancing the immune system and treating symptoms to reduce the severity of disease. In FY13 all research in this area was re-aligned to Project TM2 - Techbase Med Defense-Bio CM.</p>	16.791	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	87.849	0.000	0.000

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	121.170	133.254	122.936		122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	197.907	212.056	263.443		263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>				<b>PROJECT</b>			
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>					PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>				TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>	-	36.695	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	36.695

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TC2) funds applied research for the investigation of new medical countermeasures to include prophylaxes, pretreatments, antidotes, diagnostics, skin decontaminants and therapeutic drugs against identified and emerging chemical warfare threat agents to include a class of agents called Non Traditional Agents (NTAs). Capability areas include: Pretreatments; pretreatments for NTAs; diagnostics; diagnostics for NTAs; therapeutics; and therapeutics for NTAs. Pretreatments includes researching prophylaxes to protect against chemical agents and NTAs. Diagnostics focuses on researching diagnostic tools that help identify exposure to chemical agents and NTAs. Therapeutics focuses on researching post-exposure countermeasures to protect against chemical agents and NTAs. Research and development efforts in this project focus on formulation and scale-up of candidate compounds. In FY13, all research in this area is re-aligned into Techbase Medical Defense (TM2).

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Diagnostics</p> <p><b>Description:</b> Diagnostic Technologies: Focuses on developing state-of-the-art laboratory/fieldable methods that detect exposure to chemical warfare agents (CWA) (e.g., nerve agents and vesicants) 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><b>FY 2012 Accomplishments:</b> Completed studies of existing CWA biomarkers to determine effectiveness for early detection. Completed sulfur mustard biomarker studies for identifying pre-symptomatic treatment options. Continued investigation of a novel sensor using a phage library display. In FY13, all research in this area was re-aligned into Techbase Med Defense - Diagnostics (TM2).</p>	0.777	0.000	0.000
<p><b>Title:</b> 2) Chem Diagnostics NTA</p> <p><b>Description:</b> 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. Non-NTA Chem Diagnostics support the analytics for traditional agent diagnostics and hand-held diagnostic technologies that might be applied to NTA diagnostics.</p>	1.900	0.000	0.000

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2012 Accomplishments:</i></b> Further identified biomarkers to create an enhanced capability to pre-symptomatically diagnose NTA exposure. Continued method development for identification and validation of NTAs in clinical samples. Initiated method development for identification and validation of NTAs in clinical samples for additional compounds of interest. In FY13, all research in this area was re-aligned into Project NT2 - Techbase Med Defense - NTA Diagnostics.				
<b><i>Title:</i></b> 3) Pretreatments <b><i>Description:</i></b> Nerve Agent, Pretreatments: 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. <b><i>FY 2012 Accomplishments:</i></b> Utilized novel methods to develop candidate proteins capable of neutralizing chemical warfare agents (CWAs) in vivo. Assessed processes to produce, screen, and purify newly designed enzymes. Evaluated efficacy of small molecule approaches toward acetylcholinesterase (AChE) protection. In FY13, all research within this area was re-aligned into Project TM2 - Techbase Medical Defense - Chemical CM.		6.692	0.000	0.000
<b><i>Title:</i></b> 4) Chem Pretreatments NTA <b><i>Description:</i></b> 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. <b><i>FY 2012 Accomplishments:</i></b> Determined efficacy of enzyme candidates for all NTA exposure. In FY13, all research in this area was re-aligned to Project NT2 - Techbase Medical Defense - NTA.		2.754	0.000	0.000
<b><i>Title:</i></b> 5) Therapeutics <b><i>Description:</i></b> Cutaneous and Ocular: Focuses on therapeutic strategies to effectively minimize injuries to dermal (i.e., skin) and ocular tissues resulting from exposure to chemical warfare agents (CWAs). Involves the development of effective practical field and clinic management strategies and physical and pharmacological interventions to treat the injury processes. This work is designed to develop potential candidates that will ultimately be submitted for FDA licensure or new indications for previously licensed products for use in the treatment of chemical warfare casualties. <b><i>FY 2012 Accomplishments:</i></b>		2.810	0.000	0.000

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Evaluated the effectiveness of multiple anti-inflammatory approaches in vitro and in vivo against sulfur mustard exposure. Continued to develop molecular biology approaches to assess candidate countermeasures against skin and eye injury caused by sulfur mustard. Evaluated therapeutic approaches to mitigate the chronic effects of sulfur mustard exposure. In FY13, all research within this project was re-aligned to Project TM2 - Techbase Medical Defense - Chemical CM.</p>			
<p><b>Title:</b> 6) Therapeutics</p> <p><b>Description:</b> Neurologic: 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 FDA licensure or new indications for previously licensed products for use in the treatment of chemical warfare casualties.</p> <p><b>FY 2012 Accomplishments:</b> Utilized mechanistic understanding of reactivation to identify compounds capable of reactivating nerve-agent inhibited acetylcholinesterase (AChE) at delayed times after exposure. Identified approaches for neuroprotection, as defined by the minimization of chronic functional decrement due to nerve agent exposure. Conducted in silico and in vitro evaluation of novel and/or Food and Drug Administration licensed products for treatment of acute nerve agent exposure. In FY13, all research within this area was re-aligned to Project TM2 - Techbase Medical Defense - Chemical CM.</p>	9.778	0.000	0.000
<p><b>Title:</b> 7) Chem Therapeutics NTA</p> <p><b>Description:</b> 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).</p> <p><b>FY 2012 Accomplishments:</b> Continued binding studies to support the design and synthesis of an improved reactivator. Continued evaluation of improved products to treat NTA exposure. Continued development of animal models for various routes of exposure to NTA. Conducted in silico and in vitro evaluation of novel and/or Food and Drug Administration licensed products for treatment of NTA exposure. Studied mechanisms of NTA injury for therapeutic intervention. In FY13, all research in this area was re-aligned into Techbase Medical Defense - NTA (NT2).</p>	11.984	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	36.695	0.000	0.000

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	7.697	0.000	2.000		2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	2.336	9.642	55.087		55.087	58.342	57.675	47.340	28.759	0.000	259.181

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>				<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	-	0.000	118.208	98.111	-	98.111	104.361	102.546	99.523	103.441	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TM2) funds 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.

In FY13, all Project TB2 research was re-aligned into Project TM2 - Techbase Medical Defense.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Techbase Med Defense - Diagnostics	0.000	5.600	0.000
<b>Description:</b> 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, 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 agent-based epidemiological modeling, medical resource			

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
estimation and decision support tools. Focus on agent-based epidemiological modeling and fusion of disease surveillance data. This subject area was previously referred to as "Disease Surveillance/Epidemiological and Predictive Modeling".				
<b>FY 2013 Plans:</b> Continue FY12 efforts from Information Systems Technology, Medical & Surveillance Information and Analysis (CB2 - M&S). Continue effort on biosurveillance data stream evaluation and analysis to identify most useful biosurveillance data streams for prediction and early warning. Continue effort to devise structured outside contiguous U.S. (OCONUS) expansion roadmap for agent-based epidemiological models and increase OCONUS analytic capability through targeted areas. Continue research into data integration platforms and expand biosurveillance portfolio to support in-context, rapid detection, identification and response capabilities on the global scale. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TB2).				
<b>Title:</b> 2) Techbase Med Defense - Diagnostics <b>Description:</b> Chemical Diagnostics: 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. <b>FY 2013 Plans:</b> Develop assays for enhancing the ability to identify exposure (sublethal) to emerging chemical agent threats using newly-identified biomolecular targets. Funding for this research area was re-aligned from Tech Base Med Chem - Diagnostics (TC2). <b>FY 2014 Plans:</b> Continue to develop assays for enhancing the ability to identify sublethal exposure to emerging chemical agent threats using newly-identified biomolecular targets.		0.000	1.175	0.600
<b>Title:</b> 3) Techbase Med Defense - Diagnostics <b>Description:</b> Biological Diagnostic Assays and Reagents: 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. This subject area was previously referred to as "Biological Diagnostic Technologies". <b>FY 2013 Plans:</b> Optimize processes and platform technologies employed in laboratory characterization of host and pathogen biomarker signatures of exposure and disease processes. Mature pipeline of genomics, proteomics, systems biology, and bioinformatics tools and methods to simultaneously support companion diagnostic tests, the development of MCMs and the analytic processes required to		0.000	16.652	14.967

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
identify known, emerging, and re-emerging pathogens. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TB2) and Techbase Med Bio - TMT Platform Technologies (TB2).  <b>FY 2014 Plans:</b> Continue to optimize processes and platform technologies employed in laboratory characterization of host and pathogen biomarker signatures of exposure and disease processes. Continue to mature 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. Develop nanomaterial structure designs to enable companion diagnostics.			
<b>Title:</b> 4) Techbase Med Defense - Diagnostics  <b>Description:</b> Next Generation Technologies: Development of next generation diagnostic technologies including portable diagnostic platforms, highly parallel and informative testing formats, and nanotechnology applications. Development of novel assay formats and hardware solutions to enable point of need diagnostic capabilities, allowing for rapid guidance of medical decisions.  <b>FY 2013 Plans:</b> Discover and verify panel of pre-symptomatic differential diagnostic biomarkers of exposure to virulent bacterial and viral bio- and emerging threat class and agents. Development of portable diagnostic devices capable of use by minimally trained personnel, aiding in rapid diagnostics at the point of need. Funding for this research area in FY13 was re-aligned from Tech Base Med Bio - Diagnostics (TB2) and Techbase Med Bio - TMT Platform Technologies (TB2). In FY14 the funding for this research is consolidated into Biological Diagnostic Device Platforms.	0.000	7.561	0.000
<b>Title:</b> 5) Techbase Med Defense - Diagnostics  <b>Description:</b> Biological Diagnostic Device Platforms: 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.  <b>FY 2013 Plans:</b> Develop and mature point of need diagnostic platform technologies with orthogonal capabilities. Implement design control phased development and acceptance criteria to identify a minimum of two Next Generation Diagnostic Systems, Increment 2, candidate device platforms. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TB2) and Techbase Med Bio - TMT Platform Technologies (TB2).  <b>FY 2014 Plans:</b>	0.000	9.047	12.833

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue to develop and mature point of need diagnostic platform technologies with orthogonal capabilities. Develop a multiplexed point of care diagnostic platform for detection of biothreat agent exposure.				
<p><b>Title:</b> 6) Techbase Med Defense - Medical Countermeasures Initiative</p> <p><b>Description:</b> Medical Countermeasures Initiative (MCMi): Integrate the regulatory science and manufacturing technologies and processes developed into the DoD Medical Countermeasures Advanced Development and Manufacturing (MCM-ADM) organization as enablers of the advanced development and flexible manufacturing capability.</p> <p><b>FY 2013 Plans:</b> Investigate organotypic platforms for MCM evaluation: ex-vivo liver, kidney, alveolar lung sacs with the goal of enhancing the product development process. Construct next generation high yield protein expression platforms for biotechnology-based MCMs. Develop 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. Funding for this research area was re-aligned from MCMi - Medical Countermeasures Initiative (TB2).</p> <p><b>FY 2014 Plans:</b> Continue 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. Construct next generation high yield protein expression platforms for biotechnology-based MCMs. Develop 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>		0.000	12.972	14.386
<p><b>Title:</b> 7) Techbase Med Defense - Bio CM</p> <p><b>Description:</b> Pretreatments - Bacterial/Toxins Vaccines: Generate novel or improved vaccines against bacterial and toxin biothreat agents, and demonstrate preliminary efficacy in small animal models. Identify correlates of protective immunity in animal models.</p> <p><b>FY 2013 Plans:</b> Refine appropriate animal models for aerosolized Burkholderia mallei and pseudomallei as well as Type A Francisella tularensis with regulatory guidance. Evaluate multiple novel subunit Burkholderia vaccine candidates in small or large animal models with and without adjuvants. Define predictive value of correlates of immunity, elicited by Burkholderia species vaccine candidates. Evaluate the tolerability of novel adjuvants using the Anthrax vaccine for proof of concept, but which may potentially have applicability to other vaccine candidates. Additionally, research will continue to produce vaccine candidates designed to protect against emerging or genetically engineered Anthrax strains. Test multiple novel subunit vaccine candidates for protection against</p>		0.000	7.063	6.875

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>aerosolized Type A Francisella tularensis infection in appropriate small and large animal models. Funding for this research area was re-aligned from Tech Base Med Bio - Pretreatments (TB2).</p> <p><b>FY 2014 Plans:</b> Continue refining appropriate animal models for aerosolized Burkholderia mallei and pseudomallei as well as Type A Francisella tularensis with regulatory guidance. Continue evaluating multiple novel subunit Burkholderia vaccine candidates in small or large animal models with and without adjuvants. Continue defining predictive value of correlates of immunity, elicited by Burkholderia species vaccine candidates. Continue evaluating the tolerability of novel adjuvants using the Anthrax vaccine for proof of concept, but which may potentially have applicability to other vaccine candidates. Additionally, research will continue to produce vaccine candidates designed to protect against emerging or genetically engineered Anthrax strains. Test multiple novel subunit vaccine candidates for protection against aerosolized Type A Francisella tularensis infection in appropriate small and large animal models.</p>			
<p><b>Title:</b> 8) Techbase Med Defense - Bio CM</p> <p><b>Description:</b> Pretreatments - Vaccine Platforms and Research Tools: Design novel multi-agent vaccine platforms capable of expressing multiple antigens, investigate the ability of non-specific stimulators of immunity to enhance the effectiveness of newly generated vaccines, characterize alternative vaccine delivery (needle-free) methods and novel vaccine stabilization methodologies, and conduct studies to further advance a laboratory based, human artificial immune system to render it capable of predicting the human immune response to biodefense vaccines under development.</p> <p><b>FY 2013 Plans:</b> Utilize relevant animal models for the evaluation of the immune response to novel multi-antigen platforms. Further refine the capabilities of the surrogate human immune system, MIMIC (i.e., Modular Immune In vitro Construct), which provides an in vitro assessment of the human immune response. Initiate studies designed to lend regulatory credence to functional assays on the MIMIC to evaluate cross-reactivity of different Filovirus and Alphavirus strains. Increase efforts to develop methodologies which remove the need for cold storage and transport for vaccines and render them stable in variable and extreme temperatures. Funding for this research area was re-aligned from Tech Base Med Bio - Pretreatments (TB2).</p> <p><b>FY 2014 Plans:</b> Utilize relevant animal models for the evaluation of the immune response to novel multi-antigen platforms. Further refine the capabilities of the surrogate human immune system, MIMIC (i.e., Modular Immune In vitro Construct), which provides an in vitro assessment of the human immune response. Continue studies designed to lend regulatory credence to functional assays on the MIMIC to evaluate cross-reactivity of different Filovirus and Alphavirus strains. Increase efforts to develop methodologies which remove the need for cold storage and transport for vaccines and render them stable in variable and extreme temperatures.</p>	0.000	3.098	3.040
<p><b>Title:</b> 9) Techbase Med Defense - Bio CM</p>	0.000	8.150	16.541

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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<p><b>Description:</b> Therapeutics - Viral Therapeutics: Identify, optimize and evaluate lead candidate therapeutics for efficacy against viral pathogens.</p> <p><b>FY 2013 Plans:</b>                      Evaluate FDA approved drug combinations against Arenavirus, Bunyavirus, and Flavivirus infection. Conduct structure-based drug discovery for Alphaviruses. Identify and evaluate novel broad-spectrum host and pathogen directed small molecule therapeutics for emerging infectious diseases (i.e. Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus). A portion of TB2/TBMDB TMT Multiagent (Broad Spectrum) Medical Countermeasures will be continued in viral therapeutics (TB2/TBMDB THER). Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB2).</p> <p><b>FY 2014 Plans:</b>                      Conduct structure-based drug discovery for Alphaviruses. Develop antibody-based therapeutics for Filovirus infections. Identify and evaluate novel broad-spectrum host and pathogen directed small molecule therapeutics for emerging infectious diseases (i.e. Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus). In FY14, research previously conducted under the Multiagent Broad Spectrum Countermeasure thrust area will be transitioned into the Viral Therapeutics program under BA2 Techbase Med Defense - Bio CM (TM2).</p>			
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<p><b>Title:</b> 10) Techbase Med Defense - Bio CM</p> <p><b>Description:</b> Therapeutics - Bacterial Therapeutics: Identify, optimize and evaluate lead therapeutic candidates effective against designated bacterial threat agents.</p> <p><b>FY 2013 Plans:</b>                      Expand FDA approved drug screening program for Burkholderia, Francisella tularensis and determine in vitro susceptibilities. Continue evaluation of novel compounds against bacterial biological warfare agents. Develop lead series of MurB compounds targeting cell wall biosynthesis. Determine synergy between MurB antibacterial agents and conventional antibiotics against B. anthracis and Y. pestis. Evaluate the electron transport chain, multi drug efflux systems, and purine pathways as a target for broad-spectrum antibacterial development. Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB2).</p> <p><b>FY 2014 Plans:</b>                      Continue expansion of FDA approved drug screening program for Burkholderia, Francisella tularensis and determine in vitro susceptibilities. Continue evaluation of novel compounds against bacterial biological warfare agents. Evaluate bioactive peptides for the ability to stimulate host protective pathways. Determine synergy between lead series MurB antibacterial cell wall inhibitors and conventional antibiotics against B. anthracis and Y. pestis. Evaluate the electron transport chain, multidrug efflux systems, and purine pathways as a target for broad-spectrum antibacterial development. In FY14, research previously conducted under the</p>	0.000	7.150	15.624
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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Multiagent Broad Spectrum Countermeasure thrust area will be transitioned into the Bacterial Therapeutics program under BA2 Techbase Med Defense - Bio CM (TM2).				
<p><b>Title:</b> 11) Techbase Med Defense - Bio CM</p> <p><b>Description:</b> Therapeutics - Toxin Therapeutics: Identify, optimize and evaluate therapeutic candidates that are effective against biological toxin agents.</p> <p><b>FY 2013 Plans:</b> Characterize host proteins that interact with BoNT and identify small molecule inhibitors preventing host-toxin interactions. Validate differential expression of host genes involved in neuron response to BoNT intoxication. Identify and develop therapies that target host proteins involved in BoNT persistence in the neuron. Continue co-crystallization studies of BoNT-inhibitor complexes. Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB2).</p> <p><b>FY 2014 Plans:</b> Continue to characterize host proteins that interact with BoNT and identify small molecule inhibitors preventing host-toxin interactions. Continue to validate differential expression of host genes involved in neuron response to BoNT intoxication. Continue to identify and develop therapies that target host proteins involved in BoNT persistence in the neuron. Continue co-crystallization studies of BoNT-inhibitor complexes.</p>		0.000	2.395	2.907
<p><b>Title:</b> 12) Techbase Med Defense - Bio CM</p> <p><b>Description:</b> Multiagent (Broad Spectrum) Medical Countermeasures (MCM): Continues efforts previously funded under the Transformational Medical Technologies Initiative. It supports existing and new efforts in the discovery phase of drug development. Applied research efforts also include the investigation of existing drugs to explore their efficacy against BW agents. This involves the initiation of experiments to identify markers, correlates of protection, assays, and endpoints for further non-clinical and clinical studies and development of a scalable and reproducible manufacturing process amenable to Food and Drug Administration (FDA) Good Manufacturing Practices (GMP). In FY14, research under this thrust area will be transitioned into the Bacterial and Viral Therapeutics program under BA2 Techbase Med Defense - Bio CM (TM2).</p> <p><b>FY 2013 Plans:</b> Continue to support new MCM discovery efforts to refresh the Hemorrhagic Fever Virus (HFV) and Intracellular Bacterial Pathogen (IBP) product pipelines. Continue to identify and initiate the development of intervention strategies targeting host response to biological pathogens, inclusive of enhancing the immune system and treating symptoms to reduce the severity of disease. Funding for this research area was re-aligned from Tech Base Med Bio - TMT Broad Spectrum MCM (TB2).</p>		0.000	18.235	0.000
<p><b>Title:</b> 13) Techbase Med Defense - Chem CM</p>		0.000	7.452	4.400

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		<b>PROJECT</b> TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Chemical Medical Pretreatments - Nerve Agent, Pretreatments: 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.</p> <p><b>FY 2013 Plans:</b> Initiate search for Catalytic Bioscavenger of V agents. Assess feasibility and begin initial studies to develop a broad spectrum cocktail of V and G agent catalytic bioscavengers. Funding for this research area was re-aligned from Tech Base Med Chem - Pretreatments (TC2).</p> <p><b>FY 2014 Plans:</b> Continue search for catalytic bioscavenger of V agents. Continue studies to develop a broad spectrum cocktail of V and G agent catalytic bioscavengers. Pursue development of small molecule pretreatment against G and V agents.</p>				
<p><b>Title:</b> 14) Techbase Med Defense - Chem CM</p> <p><b>Description:</b> Chemical Medical Therapeutics - Cutaneous and Ocular: Focuses on therapeutic strategies to effectively minimize injuries to dermal (i.e., skin) and ocular tissues resulting from exposure to chemical warfare agents (CWAs). Involves the development of effective practical field and clinic management strategies and physical and pharmacological interventions to treat the injury processes. This work is designed to develop potential candidates that will ultimately be submitted for FDA licensure or new indications for previously licensed products for use in the treatment of chemical warfare casualties.</p> <p><b>FY 2013 Plans:</b> Continue to utilize molecular biology approaches to elucidate drug targets and gain further mechanistic understanding of delayed ocular injury due to sulfur mustard exposure. Funding for this research area was re-aligned from Tech Base Med Chem - Therapeutics (TC2).</p>		0.000	1.270	0.000
<p><b>Title:</b> 15) Techbase Med Defense - Chem CM</p> <p><b>Description:</b> Chemical Medical Therapeutics - Neurologic: 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 FDA licensure or new indications for previously licensed products for use in the treatment of chemical warfare casualties.</p> <p><b>FY 2013 Plans:</b></p>		0.000	9.775	5.938

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Continue investigating potential for broad spectrum/centrally active reactivator. Continue search for Neuroprotectant effective up to 4 hours after seizure initiation. Funding for this research area is re-aligned from Tech Base Med Chem - Therapeutics (TC2). <b>FY 2014 Plans:</b> Continue investigating potential for broad spectrum/centrally active cholinesterase reactivator. Continue studies to facilitate therapeutics crossing the blood brain barrier. Explore molecular, nanomaterial based drug delivery platforms.			
<b>Title:</b> 16) Techbase Med Defense - Rad CM <b>Description:</b> Radiation Medical Countermeasures: Develop medical countermeasures to protect the Warfighter against acute radiological/nuclear exposure, to include developing both pretreatments (prophylaxis) and post-irradiation therapeutics against radiological/nuclear exposure. DoD is the only governmental agency currently developing medical prophylaxis to protect Warfighters and/or other responders in the event of a radiological incident. <b>FY 2013 Plans:</b> Continue evaluation of novel biomarkers useful for biodosimetry and identification of potential therapeutic approaches. Funding for this research area was re-aligned from Tech Base Med Rad - Radiation Countermeasures (TR2).	0.000	0.613	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	118.208	98.111

<b>C. Other Program Funding Summary (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• TB2: <i>MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	87.849	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	87.849
• TC2: <i>MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)</i>	36.695	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	36.695
• TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	0.935	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.935
• TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>	168.684	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	168.684
• TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>	21.182	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	21.182

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>	1.431	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1.431
• MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	121.170	133.254	122.936		122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	7.697	0.000	2.000		2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	197.907	212.056	263.443		263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	2.336	9.642	55.087		55.087	58.342	57.675	47.340	28.759	0.000	259.181
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	0.935	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.935

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TR2) funds applied research to develop medical countermeasures to protect the Warfighter against acute radiological exposure. Specifically, innovative technical approaches will be used to develop products to mitigate health consequences resulting from Acute Radiation Exposure (ARS) and Delayed Effects of Acute Radiation Exposure (DEARE). The research and development of medical countermeasures for radiation exposure will ultimately enhance the survivability of Warfighters and will serve to significantly minimize the development of acute radiation syndromes and subsequent health problems. Results of efforts funded under this project are collaboratively shared with other government agencies, while the Department of Defense maintains an emphasis on the development of pretreatments to protect military personnel who could be involved in responding to a radiological incident. In FY13, all research in this area is re-aligned into Techbase Medical Defense (TM2).

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Radiological Medical Countermeasures	0.935	0.000	0.000
<b>Description:</b> Radiation Medical Countermeasures: Develop medical countermeasures to protect the Warfighter against acute radiological/nuclear exposure, to include developing both pretreatments (prophylaxis) and post-irradiation therapeutics against radiological/nuclear exposure. DoD is the only governmental agency currently developing medical prophylaxis to protect Warfighters and/or other responders in the event of a radiological incident.			
<b>FY 2012 Accomplishments:</b> Evaluated novel biomarkers for biodosimetry and identification of potential therapeutic approaches. In FY13, all Project TR2 research was re-aligned into Techbase Medical Defense - RAD CM (TM2).			
<b>Accomplishments/Planned Programs Subtotals</b>	0.935	0.000	0.000

PE 0602384BP: *CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

Chemical and Biological Defense Program

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 2: <i>Applied Research</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0602384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	<b>PROJECT</b> TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	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 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	225.441	234.280	170.847	-	170.847	154.659	163.156	190.335	194.897	Continuing	Continuing
CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	-	23.838	20.034	18.091	-	18.091	19.224	18.348	20.621	19.960	Continuing	Continuing
NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>	-	0.000	31.916	23.333	-	23.333	29.248	30.727	37.728	40.975	Continuing	Continuing
TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>	-	168.684	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	168.684
TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>	-	21.182	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.182
TE3: <i>TEST &amp; EVALUATION (ATD)</i>	-	10.306	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.306
TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	-	0.000	182.330	122.717	-	122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>	-	1.431	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.431
TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>	-	0.000	0.000	6.706	-	6.706	6.257	6.575	8.196	7.852	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This program element (PE) demonstrates technologies that enhance the ability of U.S. forces to deter, defend against, and survive Chemical, Biological, and Radiological (CBR) warfare. The PE funds advanced technology development for Joint Service and Service-specific requirements in both medical and physical sciences CBR defense areas. The medical program (was TB3, TC3, TR3, but in FY13 these continue within one 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. In the physical sciences area (CB3), the focus is on demonstrations of CB defense technologies, including biological detection, chemical detection, information system technology for hazard prediction and systems performance, and protection, and decontamination. NT3 consolidated all efforts related to non-traditional agents (NTAs), including NTA chemical diagnostics, medical pretreatments, therapeutics, detection, and protection



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>
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and hazard mitigation. The PE also provides for the conduct of advanced technology development in the areas of real-time sensing, accelerated biological warfare operational awareness, and the restoration of operations following a biological warfare or chemical warfare attack (project TT3). 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 System Integration/Demonstration (PE 0603884BP/PE 0604384BP) activities.

Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. Approximately \$71.9M supports the priority to "Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events." Approximately \$60.0M supports the priority to "Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities." Approximately \$75.4M supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents."

To recap, in FY13, all traditional agent Medical Biological and Medical Chemical Defense efforts (Projects TB3 and TC3) were re-aligned to Project TM3 - Techbase Medical Defense (ATD). CB3 Advanced Technology Development efforts continue to pursue solutions against traditional agents. All non-traditional agent (NTA)-dedicated research (both medical and non-medical) was re-aligned to Project NT3 - Techbase Non-Traditional Agents Defense (ATD). 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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	229.200	234.280	220.606	-	220.606
Current President's Budget	225.441	234.280	170.847	-	170.847
Total Adjustments	-3.759	0.000	-49.759	-	-49.759
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.608	0.000			
• SBIR/STTR Transfer	-3.151	0.000			
• Other Adjustments	0.000	0.000	-49.759	-	-49.759

**Change Summary Explanation**

Funding: FY14

-\$49.759M Other Adjustments (CB3 -\$252K; NT3 -\$7,531K; TM3 -\$48,682K; TT3 +\$6,706K)

Schedule: N/A

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**  
0400: *Research, Development, Test & Evaluation, Defense-Wide*  
BA 3: *Advanced Technology Development (ATD)*

**R-1 ITEM NOMENCLATURE**  
PE 0603384BP: *CHEMICAL/BIOLOGICAL DEFENSE (ATD)*

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	-	23.838	20.034	18.091	-	18.091	19.224	18.348	20.621	19.960	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (CB3) demonstrates technology advancements for Joint Service application in the areas of detection, information systems technology, protection/hazard mitigation, and technology transition efforts. These activities will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. This project also includes efforts dedicated to developing capabilities to protect against Non-Traditional Agents (NTAs). Detection focuses on advanced development of technologies from applied research for standoff and point detection and identification of chemical and biological agents. Information systems advanced technology focuses on areas of advanced warning and reporting, hazard prediction and assessment, simulation analysis and planning, and systems performance modeling. Protection and Hazard Mitigation focuses on advanced development of technologies that protect and reduce the chemical/biological/radiological/nuclear threat or hazard to the Warfighter, weapons platforms, and structures. This project also funds advanced development of chemical and biological defense science and technology initiatives and transitions them to advanced development programs in Budget Activities 4 and 5, through prototypes that are evaluated in Advanced Technology Demonstration (ATDs) and Joint Warfighter Experimentation (JWE). In FY13, all NTA-dedicated research from this Project was re-aligned to Project NT3 - Techbase Non-Traditional Agents Defense (ATD).

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Detection	7.325	5.852	3.514
<b>Description:</b> Chemical and Biological Stand-off Technology: 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.			
<b>FY 2012 Accomplishments:</b> Closed out development of test methodology for next generation chemical standoff technology. Began processes of validating ground truth systems for point technologies (genomic and proteomic technology) field assessments.			
<b>FY 2013 Plans:</b> Continue processes of validating ground truth systems for point technologies (genomic and proteomic technology) field assessments.			
<b>FY 2014 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue processes of validating ground truth systems for point technologies (genomic and proteomic technology) field assessments.				
<p><b>Title:</b> 2) Detection NTA</p> <p><b>Description:</b> Detection NTA: Focuses on technologies to provide Non-Traditional Agents (NTA) detection capabilities.</p> <p><b>FY 2012 Accomplishments:</b> Initiated the development of test methodology to validate signatures for chemical aerosols threat materials. In FY13, all research in this area was re-aligned to Project NT3 - Techbase Non-Med - Detection NTA.</p>		7.340	0.000	0.000
<p><b>Title:</b> 3) Information Systems Technology</p> <p><b>Description:</b> Warning and Reporting Information and Analysis: Emphasis on developing science and technologies for collaborative information management, fusion of disparate information from multiple sources, environmental databases and modeling, fusion of syndromic/diseases surveillance data, and synthetic environments for model performance evaluation and acquisition decisions.</p> <p><b>FY 2012 Accomplishments:</b> Conducted Verification and Validation (V&amp;V) of source term estimation (STE) and hazard refinement (HR) algorithms for use in complex environments (e.g., variable terrain, urban, water, and building interiors). Transitioned report on the use of meteorological ensemble predictions in dispersion models to Joint Effects Model (JEM).</p>		1.267	0.000	0.000
<p><b>Title:</b> 4) Information Systems Technology</p> <p><b>Description:</b> Hazard Prediction: 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 from weapons and accidents.</p> <p><b>FY 2012 Accomplishments:</b> Continued development of the high altitude post-missile intercept effects model for defensive use, eventual integration into hazard prediction and counterproliferation model frameworks by drawing upon existing modeling of other agencies and handling both successfully intercepted weapons as well as intentionally functioning weapons of a chemical, biological or nuclear payload. Continued work on configuration management prototype to implement standard module interfaces to comply with advanced development program requirements. Established field transport and dispersion databases and websites for accessible permanent test archiving.</p> <p><b>FY 2013 Plans:</b></p>		0.913	4.747	3.739

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Continue implementation of new numerical schemes for transport and dispersion models. Continue enhancement of urban transport and dispersion models which transitioned from CB2 efforts in FY12. Continue with work on configuration management prototype to establish upgraded capabilities listed as valid requirements for JEM. Complete development on the high altitude post-missile intercept effects model. Continue with field transport and dispersion databases and websites for accessible permanent test archiving. Continue implementation and testing of new numerical schemes for future establishment of 64-bit/multi-core capable models.</p> <p><b>FY 2014 Plans:</b> Continue implementation of new numerical schemes and performance optimization for transport and dispersion models. Continue enhancement of high fidelity urban transport and dispersion. Continue with work on configuration management of science and technology prototype to establish upgraded capabilities listed as valid requirements for Hazard Prediction and Assessment Capability/JEM (HPAC/JEM). Initiate 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). Continue providing field transport and dispersion databases and websites for community accessible permanent test archiving. Continue implementation and testing of new numerical schemes for future establishment of 64-bit/multi-core capable models.</p>				
<p><b>Title:</b> 5) Information Systems Technology</p> <p><b>Description:</b> Operational Effects &amp; Planning: 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.</p> <p><b>FY 2012 Accomplishments:</b> Transitioned medical countermeasure models, to include: One Chemical Model: Organophosphate; and Five Biological Models: Anthrax, Plague, Lassa Fever, Burkholderia Pseudomallei, and Tularemia models. In FY14, all System Performance Model development will be consolidated under the Operational Effects &amp; Planning area.</p> <p><b>FY 2014 Plans:</b> Continue system performance model integration with advanced development programs and initiate development of second generation versions of systems performance models in individual protection, contamination avoidance and decontamination.</p>		1.412	0.000	2.000
<p><b>Title:</b> 6) Information Systems Technology</p> <p><b>Description:</b> Data Analysis: Develop Chemical, Biological, Radiological and Nuclear (CBRN) data sharing capabilities.</p> <p><b>FY 2012 Accomplishments:</b></p>		0.750	1.985	3.144

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Performed improvements in CBRN data management capabilities, with emphasis on enabling access to information for analysis within CBDP systems performance models. Enhanced analysis toolset which provides the ability to evaluate decontaminants and decontamination systems.</p> <p><b>FY 2013 Plans:</b> Continue to develop 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, which was initiated in Information Systems Technology, Systems Performance &amp; Information Analysis (CB2 - M&amp;S). Conclude development of initial versions of systems performance models in collective protection, individual protection, contamination avoidance and decontamination. Initiate system performance model integration with advanced development for program-wide exploitation. A portion of this effort is funded in Test &amp; Evaluation (TE3). In FY14, all System Performance Model development will be consolidated under the Operational Effects &amp; Planning area.</p> <p><b>FY 2014 Plans:</b> Integrate additional 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.</p>				
<p><b>Title:</b> 7) Information Systems Technology</p> <p><b>Description:</b> Medical Surveillance &amp; Information Analysis: Integrate existing disparate military and civilian datasets into advanced warning systems, and leverage and enhance epidemiological models and algorithms for disease prediction, 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 agent-based epidemiological modeling, medical resource estimation and decision support tools. Focus areas include health/human effects modeling (casualty estimation, agent-based epidemiological modeling and fusion of disease surveillance data).</p> <p><b>FY 2012 Accomplishments:</b> Began Validation and Verification (V&amp;V) efforts for existing agent-based epidemiological models, to include underlying population data and disease spread algorithms, with regard to use in robust adaptive decision making. In FY13, all research in this area was re-aligned into Techbase Med Bio-Diagnostics (TM3).</p>		0.867	0.000	0.000
<p><b>Title:</b> 8) Biosurveillance (BSV)</p> <p><b>Description:</b> Biosurveillance/Disease Surveillance: Integrate existing disparate military and civilian data sets into advanced warning systems, and leverage and enhance epidemiological models and algorithms for disease prediction, 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 agent-based epidemiological</p>		0.000	0.000	1.289

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>modeling, medical resource estimation and decision support tools. Focus on agent-based epidemiological modeling and fusion of disease surveillance data.</p> <p><b>FY 2014 Plans:</b> Complete effort initiated in Project TM3 (Diagnostics and Disease Surveillance) - of Verification and Validation (V&amp;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. Demonstrate data stream (inclusive of point of need diagnostic data) integration for early warning and analytical capabilities of the BSV Ecosystem. Develop 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. Continue the development of a scalable, replicable framework to serve as the basis for a biosurveillance cloud for government data. Continue development of BioID, 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.</p>			
<p><b>Title:</b> 9) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Lightweight Integrated Fabric: Demonstration of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform.</p> <p><b>FY 2012 Accomplishments:</b> Incorporated next phase of integrated textile systems into a complete second generation candidate ensemble for the Uniform Integrated Protective Ensemble (UIPE) Phase II program. Provided a trade-space analysis of all government, industrial, and academic candidate materials for use in future UIPE phase initiations. Transitioned human performance initial tool set to the Advanced Development - UIPE program so that it can be used in the optimization of protective ensemble design.</p> <p><b>FY 2013 Plans:</b> Continue to integrate next phase of integrated textile systems into a complete second generation candidate ensemble for the Uniform Integrated Protective Ensemble (UIPE) Phase II program as well as other applicable Advanced Technology Demonstrations that may materialize. Continue the trade-space analysis of all government, industrial, and academic candidate materials for use in future UIPE phase initiations. Continue to transition the human performance tool set to the Advanced Development - UIPE program so that it can be used in the optimization of protective ensemble design.</p> <p><b>FY 2014 Plans:</b> Continue to integrate next phase of integrated textile systems into a complete second generation candidate ensemble for the Uniform Integrated Protective Ensemble (UIPE) Phase II program as well as other applicable Advanced Technology Demonstrations that may materialize. Transition new fabric technologies to the UIPE program. Scale-up fabrics to ensemble</p>	0.691	1.637	1.809

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>prototypes and test in a relevant environment. Continue the trade-space analysis of all government, industrial, and academic candidate materials for use in future UIPE phase initiations. Complete transition the human performance tool set to the Advanced Development - UIPE program so that it can be used in the optimization of protective ensemble design.</p> <p><b>Title:</b> 10) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Low-Resistance, Low-Profile Filtration: 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.</p> <p><b>FY 2012 Accomplishments:</b> Continued 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. Initiated transition of these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs.</p> <p><b>FY 2013 Plans:</b> Continue 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. Continue transition of these technologies to the JSGPM and JSAM programs.</p> <p><b>FY 2014 Plans:</b> Continue 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. Continue transitioning these technologies to the JSGPM and JSAM programs.</p>		0.690	1.292	0.937
<p><b>Title:</b> 11) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Low-Burden Air Purifying Respirator: 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.</p> <p><b>FY 2012 Accomplishments:</b> Advanced concept CBRN technologies were integrated within the confines of the Chem/Bio protection component of the Helmet Electronics and Display System - Upgradable Protection (HEADS-UP) Army Technology Objective (ATO) program, which has multi-service participation for ground applications.</p> <p><b>FY 2014 Plans:</b> Develop prototype respirator and conduct testing in a relevant environment.</p>		0.746	0.000	0.467
<p><b>Title:</b> 12) Protection &amp; Hazard Mitigation</p>		0.204	0.000	0.000



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Logistically Sustainable Air Purification for Collective Protection: Demonstration of chemical and biological air-purification alternative technologies that minimize or eliminate the need for expendable media within acceptable size, weight, and power constraints.</p> <p><b>FY 2012 Accomplishments:</b> Demonstrated breadboard concepts of a residual life indicator (RLI) for collective filtration systems.</p>				
<p><b>Title:</b> 13) Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Decontamination Family-of-Systems (DFoS): Demonstration of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application.</p> <p><b>FY 2012 Accomplishments:</b> Continued demonstration of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. Integrated robust surface chemistry and decontamination process analysis using ultra high vacuum system into technology maturation process for hazard mitigation. Demonstrated Integrated Decontamination Test Evaluation System (IDTES) live agent testing facility that allows scaled relevant environment evaluations. Pursued the optimization of reactive coatings (durable). Transitioned research efforts "Surfactant Technology for Surface Chemical/Biological Agent Removal" and "Decontamination Assurance Spray."</p> <p><b>FY 2013 Plans:</b> Continue the development, demonstration, and transition of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. Continue to integrate and demonstrate robust surface chemistry and decontamination process analysis using ultra high vacuum system into technology maturation process for hazard mitigation. Continue to develop coatings, innovative chemistries/processes, enzyme approaches to hazard mitigation, human remains decontamination processes, and radiological/nuclear decontamination/hazard mitigation capabilities. Transition quantitatively evaluated interim capability for radiological/nuclear decontamination/hazard mitigation.</p> <p><b>FY 2014 Plans:</b> Continue the development, demonstration, and transition of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. Continue to integrate and demonstrate robust surface chemistry and decontamination process analysis using ultra high vacuum system into technology maturation process for hazard mitigation. Continue to develop coatings, innovative chemistries/processes, enzyme approaches to hazard mitigation, human remains decontamination processes, and radiological/nuclear decontamination/hazard mitigation capabilities. Transition quantitatively evaluated interim capability for radiological/nuclear decontamination/hazard mitigation.</p>		1.271	0.397	1.192
<p><b>Title:</b> 14) Protection &amp; Hazard Mitigation</p>		0.362	0.000	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p><b>Description:</b> Innovative Systems Concepts and Analysis: Development and systems analysis of novel system concepts for chemical and biological protection of occupants of buildings and platforms that integrates emerging technologies.</p> <p><b>FY 2012 Accomplishments:</b> Transitioned research effort "Reactive Airlock for Armored Vehicles, Shipboard and Shelter Applications."</p> <p><b>Title:</b> 15) Test and Evaluation (T&amp;E)</p> <p><b>Description:</b> Test and Evaluation, Information System Technology: Develop CBRN data sharing capabilities and simulation tools.</p> <p><b>FY 2013 Plans:</b> Continue to develop the Test &amp; Evaluation components 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. Conclude development of initial versions of systems performance models in collective protection, individual protection, contamination avoidance and decontamination. This project is being partially funded by CB3 Tech Base Non Med - Modeling and Simulation.</p>	0.000	4.124	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	23.838	20.034	18.091

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	97.530	44.331	53.901		53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
• TE3: <i>TEST &amp; EVALUATION (ATD)</i>	10.306	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	10.306
• CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	13.432	3.038	26.853		26.853	46.788	40.163	34.595	2.873	Continuing	Continuing
• DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>	20.755	12.374	17.870		17.870	10.611	13.174	9.337	5.500	Continuing	Continuing
• IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	5.219	13.831	8.199		8.199	2.845	0.360	0.100	0.100	Continuing	Continuing
• TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	14.458	4.994	15.671		15.671	20.408	15.872	13.044	11.044	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>	2.985	3.377	0.000		0.000	0.000	0.000	0.000	0.000	0.000	6.362

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>				<b>PROJECT</b>			
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>					PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>				NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>	-	0.000	31.916	23.333	-	23.333	29.248	30.727	37.728	40.975	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This 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 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Techbase Medical Defense - NTA Diagnostics</p> <p><b>Description:</b> Chem Diagnostics NTA: 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.</p> <p><b>FY 2013 Plans:</b> Continue development of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. Funding for this research area was re-aligned from Tech Base Med Defense - Diagnostics NTA (TC3).</p> <p><b>FY 2014 Plans:</b> Continue development of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. Transition method development for identification and validation of NTAs in clinical samples to the Laboratory Response Network.</p>	0.000	0.404	0.574
<p><b>Title:</b> 2) Techbase Medical Defense - NTA Pretreatments</p>	0.000	0.503	3.960

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Chemical Medical Pretreatments NTA: 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.</p> <p><b>FY 2013 Plans:</b> Continue exploitation of alternative expression systems for production of recombinant butylcholinesterase (rBuChE). Complete study of use of plasma derived human butylcholinesterase (huBChE) as prophylactic for all nerve agents. Funding for this research area was re-aligned from Tech Base Med Chem - Pretreatments NTA (TC3).</p> <p><b>FY 2014 Plans:</b> Continue exploitation of alternative expression systems for production of rBuChE. Pursue novel in-silico and/or in vitro methods to facilitate high throughput screening and development of medical countermeasures.</p>				
<p><b>Title:</b> 3) Techbase Medical Defense - NTA Therapeutics</p> <p><b>Description:</b> Chemical Medical Therapeutics NTA: 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.</p> <p><b>FY 2013 Plans:</b> Continue formulation and stability studies. Begin safety studies in small animal model using selected formulation. Funding for this research area was re-aligned from Tech Base Med Chem - Therapeutics NTA (TC3).</p> <p><b>FY 2014 Plans:</b> Continue formulation and stability studies of therapeutic compounds. Continue small animal model safety studies of selected formulations of centrally active reactivator or anti-cholinergic compounds.</p>		0.000	10.055	9.935
<p><b>Title:</b> 4) Techbase Non-Medical - Detection</p> <p><b>Description:</b> Detection NTA: Focuses on technologies to provide NTA detection capabilities.</p> <p><b>FY 2013 Plans:</b> Continue the development of test methodology to validate signatures for chemical aerosol threat materials. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Detection NTA (CB3).</p> <p><b>FY 2014 Plans:</b></p>		0.000	13.373	5.322

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue the development of test methodology to validate signatures for chemical aerosol threat materials.				
<p><b>Title:</b> 5) Techbase Non-Medical - Modeling &amp; Simulation</p> <p><b>Description:</b> Modeling &amp; Simulation NTA: Provide modeling of NTA materials for hazard prediction and development of defensive countermeasures. Develop NTA source term algorithms for predicting CBRN hazards from intentionally functioning weapons, counter-proliferation scenarios (bomb on target), and missile intercept. "Intentionally Functioning Weapons" refers to the case where a missile has released its chemical or biological payload as it was designed, rather than where the release was caused by our missile interdiction. Transition NTA agent fate for secondary effects, environmental/atmospheric chemistry, atmospheric and waterborne transport and dispersion, human effects, model Validation and Verification (V&amp;V), scaled testing, casualty estimation, and supporting data management.</p> <p><b>FY 2014 Plans:</b> Conduct analysis and oversight of the final year of NTA simulant testing related to creating and verifying NTA modeling source terms, for defense against CBRN hazards.</p>		0.000	0.000	0.288
<p><b>Title:</b> 6) Techbase Non-Medical - Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Protection &amp; Hazard Mitigation - NTA Air Purification: Study and assessment of filter technologies.</p> <p><b>FY 2013 Plans:</b> Continue development, verification and demonstration of novel materials to improve performance against NTAs. Transition these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection &amp; Hazard Mitigation NTA (CB3).</p>		0.000	0.348	0.000
<p><b>Title:</b> 7) Techbase Non-Medical - Protection &amp; Hazard Mitigation</p> <p><b>Description:</b> Protection &amp; Hazard Mitigation - NTA Percutaneous Protection: Study and assessment of protective technologies.</p> <p><b>FY 2013 Plans:</b> Continue the verification of protective fabrics against non-traditional agents. Demonstrate and begin transition of low burden technologies (such as reduced thermal-burden fabrics, and lighter weight fabrics) to improve overall protective clothing performance against NTAs. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection &amp; Hazard Mitigation NTA (CB3).</p> <p><b>FY 2014 Plans:</b></p>		0.000	0.349	1.065

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue verification, demonstration and transition of low burden technologies to improve overall protective clothing performance against NTAs. Transition technologies to the Uniform Integrated Protective Ensemble (UIPE) program.			
<b>Title:</b> 8) Techbase Non-Medical - Protection & Hazard Mitigation <b>Description:</b> Protection & Hazard Mitigation - NTA Decontamination: Study and assessment of decontamination technologies. <b>FY 2013 Plans:</b> Continue verification and demonstration of decontamination technologies against NTAs. Continue to develop and demonstrate enzyme technology for low-impact decon of NTAs. Continue to enhance NTA related understanding and capabilities of current decontamination and hazard mitigation technologies and develop additional processes for NTA hazard mitigation. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Protection & Hazard Mitigation NTA (CB3). <b>FY 2014 Plans:</b> Continue verification, demonstration, and transition of decontamination technologies against NTAs to the Advanced Development - Decontamination Family of Systems (DFoS) program. Continue to develop and demonstrate enzyme technology for low-impact decontamination of NTAs, and transition these technologies. Continue to enhance NTA-related understanding and capabilities of current decontamination and hazard mitigation technologies and develop additional processes for NTA hazard mitigation.	0.000	0.350	1.238
<b>Title:</b> 9) Techbase Non-Medical - Test & Evaluation <b>Description:</b> Test and Evaluation (T&E) NTA: Develops test and evaluation technologies and processes in support of NTA activities. <b>FY 2013 Plans:</b> Complete initial select agent testing, and continue further prioritized agent testing. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Test & Evaluation NTA (TE3). <b>FY 2014 Plans:</b> Continue further prioritized select agent testing.	0.000	6.534	0.951
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	31.916	23.333

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• NT2: <i>TECHBASE NON-TRADITIONAL AGENTS</i>	0.000	60.730	75.053		75.053	71.749	72.932	77.542	77.805	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>DEFENSE (APPLIED RESEARCH)</i>											
• CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	13.432	3.038	26.853		26.853	46.788	40.163	34.595	2.873	Continuing	Continuing
• DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>	20.755	12.374	17.870		17.870	10.611	13.174	9.337	5.500	Continuing	Continuing
• IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>	0.000	1.102	2.708		2.708	6.811	4.680	0.300	0.000	0.000	15.601
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	7.697	0.000	2.000		2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
• TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	14.458	4.994	15.671		15.671	20.408	15.872	13.044	11.044	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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>				<b>PROJECT</b>			
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>					PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>				TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>			
<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO <sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>	-	168.684	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	168.684

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TB3) supports 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. 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. Categories of this project include biological defense capability areas such as Pretreatments, Diagnostics, and Therapeutics. Pretreatment efforts conduct research and development (R&D) of promising vaccines, medications, and technologies provided prior to potential exposure to biological agents. The goal is to reduce or to entirely prevent adverse effects of exposure. Diagnostic efforts are aimed at screening procedures and analytical methods to verify exposure and determine the effects of exposure to biological warfare (BW) or other biothreat agents. Therapeutic efforts provide medical solutions to sustain and protect the Warfighter in biological environments. Specifically, therapeutic efforts are aimed at developing medical countermeasures to treat exposure to biological or emerging threats such as bacterial (plague, anthrax, glanders), viral (smallpox, encephalitic Alphaviruses), and toxin (ricin, botulinum neurotoxin, staphylococcal enterotoxin) agents.

This project includes the Transformational Medical Technologies Initiative (TMTI). The program was launched to respond to the threat of emerging or intentionally engineered biological threats. TMT's mission is to protect the Warfighter from genetically engineered or emerging infectious disease biological threats by providing a rapid response capability from identification of pathogens to the delivery of medical countermeasures. This mission is accomplished through two main efforts: 1) developing broad spectrum (multi-agent) therapeutics against BW or emerging infectious disease agents (e.g. one drug that treats multiple agents); and 2) developing platform technologies to assist in the rapid development of medical countermeasures (MCMs) in response to BW or emerging infectious disease agents (e.g. developing new and innovative ways to mass produce drugs in the event of a biological incident). Effective FY12 this effort was funded as the Transformational Medical Technologies (TMT) Program.

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. Specifically, the MCMI will provide the capability for the advanced development and flexible manufacturing of biological MCM (to include TMT developed MCMs) to address CBRN threats, including novel and previously unrecognized, naturally-occurring emerging infectious diseases. MCMI efforts within science and technology (S&T) are concentrated in three areas: 1)

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>
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transition of novel platform/expression systems for MCMs, 2) transition advancement of regulatory science, and 3) integration of novel platforms with MCM advanced development and manufacturing.

In FY13, all research in this Project (TB3) was re-aligned to Project TM3 - Techbase Medical Defense (ATD).

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Medical Countermeasures Initiative (MCMI)</p> <p><b>Description:</b> The MCMI will integrate the regulatory science and manufacturing technologies and processes developed into the advanced development and flexible manufacturing capability (MCM-Advanced Development and Manufacturing (ADM)).</p> <p><b>FY 2012 Accomplishments:</b> Initiated and refined the development of multi-product/multi-use MCM technology platforms for the advanced development of MCMs for CBRN threats and emerging infectious diseases. Evaluated and exploited the regulatory advantages of such systems, with the intent that FDA regulatory approval of the same platform for one product will simplify subsequent regulatory approvals of other products based on the same system. Initiated and refined development of new technologies and approaches that facilitate and accelerate the development and regulatory review of medicinal products. In FY13, all research in this area was re-aligned into Techbase Med Defense - Medical Countermeasures Initiative (TM3).</p>	28.878	0.000	0.000
<p><b>Title:</b> 2) Diagnostics (Biosurveillance)</p> <p><b>Description:</b> Diagnostic Technologies: Development and verification of rapid, sensitive and specific tests for the identification of Biological Warfare Agents (BWAs) and their expressed toxins in biological fluids of Warfighters for the diagnosis of exposure/infection. Discovery of biomarkers of response to exposure. Evaluation of next generation diagnostic technologies including portable instrument platforms, highly parallel and informative testing formats, and nanotechnology applications.</p> <p><b>FY 2012 Accomplishments:</b> Validated and submitted pre-EUA (Emergency Use Authorization) data to FDA for high priority BWA and emerging threat assays to preposition for biopreparedness. Transitioned portable sequence based genetic analyzer and verified assays for top ten priority agents. Transitioned technology watch report and mature candidate platform technologies of sufficient utility for advanced development as Next Generation Diagnostics System and/or Biosurveillance platform. Transitioned data packages for detection of antibiotic (Cipro) resistance. Validated and transitioned scale-up protocols for single domain biosynthetic (recombinant) antibodies to bacterial and viral BWA targets for use in austere environments. Supplemented/continued accrual of geographically/genetically representative strain collection and transfer to repository; developed quantitative cell culture for an additional emerging threat agent of high genetic variability. Transitioned atlas/database of phenotypic and genotypic characteristics of relevant BWA</p>	12.285	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
bacterial strains to advanced developer. In FY13, all research in this area was re-aligned into Project TM3 - Techbase Med Bio - Diagnostics.				
<b>Title:</b> 3) Pretreatments <b>Description:</b> Bacterial/Toxin Vaccines: Evaluates the best single agent bacterial and toxin vaccines for effectiveness against aerosol challenge in large animal models. <b>FY 2012 Accomplishments:</b> Performed final analysis of data from Phase I Clinical trial. Assembled final Ricin vaccine data package. In FY13, all research in this area was re-aligned into Project TM3 - Techbase Med Bio - Pretreatments.		2.564	0.000	0.000
<b>Title:</b> 4) Pretreatments <b>Description:</b> Viral Vaccines: 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. The purpose of developing these animal models is to support pivotal animal studies under the "Animal Rule". <b>FY 2012 Accomplishments:</b> Completed remaining aerosol efficacy studies for the Ebola Zaire and Ebola Sudan vaccine components in non-human primates. Conducted formulation studies of Ebola and Marburg vaccine components. Initiated the development of Filovirus and Alphavirus immunological assays to support advanced development. Coordinated with the advanced developer to fulfill S&T needs in support of the Filovirus vaccine transition. For Alphavirus DNA vaccines, completed an Investigational New Drug (IND) package for the Venezuelan Equine Encephalomyelitis (VEE) component, submitted the IND package to the FDA and initiated a Phase I clinical trial. As a part of this trial, assessed alternative methodologies for vaccine delivery (i.e., electroporation) via intra-muscular or intra-dermal administration, manufactured clinical grade (sufficient quality to be administered to humans in a Phase I clinical trial) lots of the EEE (Eastern) and WEE (Western) DNA components. Conducted pre-clinical studies on a trivalent VEE, EEE, WEE DNA formulation. For the Alphavirus replicon vaccine, conducted pre-clinical studies. Continued development of animal models for Alphaviruses (EEE and WEE), and Filoviruses (Ebola Sudan, Ebola Zaire, Ebola Bundibugyo, and Marburg), to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure. Although the Filovirus vaccines were transitioned in FY11, work continued on the selected candidate(s) to fill knowledge gaps. In FY13, all research in this area was re-aligned into Project TM3 - Techbase Med Bio - Pretreatments.		19.530	0.000	0.000
<b>Title:</b> 5) Pretreatments <b>Description:</b> Vaccine Platforms and Research Tools: Conducts 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		3.450	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>vaccine candidates. Identifies correlates of protection in humans, and predicts the success of lead vaccine candidates in humans. Work conducted under Vaccine Platforms and Research Tools are distinct from those performed under Viral Vaccines because the focus is on the use of novel technologies to support vaccine candidates, not on the vaccine candidates themselves. Vaccine Platforms and Research Tools utilize novel technologies to stabilize advanced vaccine candidates as well as alternative delivery modalities.</p> <p><b>FY 2012 Accomplishments:</b> Continued evaluation of the safety and immune stimulating capability of mature Filovirus and Alphavirus vaccine candidates in humans by using the Modular Immune In Vitro Construct (MIMIC) technology. Continued formulation studies to produce a thermo-stable, spray-dried formulation of an advanced vaccine candidate. Evaluated additional stabilization technologies that provide thermal stability to multiple classes of vaccines such as viral vectored vaccines and subunit protein vaccines. Tested alternative (needle-free) vaccine delivery technologies such as inhalers or skin patches for the delivery of mature vaccine candidates. Evaluated clinical samples from Filovirus and Alphavirus outbreaks in multiple international locations to determine human immune responses. In FY13, all research in this area was re-aligned into Project TM3 - Techbase Med Bio - Pretreatments.</p>				
<p><b>Title:</b> 6) Therapeutics</p> <p><b>Description:</b> Viral Therapeutics: Identify, optimize and evaluate potential therapeutic candidates effective against designated viral threat agents.</p> <p><b>FY 2012 Accomplishments:</b> Evaluated polyclonal immunotherapies for Filoviruses in non-human primate models. Initiated projects to develop monoclonal antibody-based therapies for Filovirus infection. Continued evaluation of optimized lead compounds against Alphaviruses in animal models of infection. Continued evaluation of Filovirus vaccines as treatments for post-exposure Filovirus infection. Identified and evaluate FDA approved drugs and combinations of drugs for activity against Filoviruses and Alphaviruses in cell culture. Evaluated select FDA-approved drugs for efficacy against Filoviruses in animal models of infection. Initiated an expanded screening program to determine efficacy of FDA approved compounds against other viral infectious diseases (i.e. Flavivirus, Arenavirus, Bunyavirus). Identified and optimized novel host-directed small molecule inhibitors, with activity against Biothreat Viruses (i.e., Filovirus, Flavivirus, Arenavirus, and Bunyavirus). In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med Bio-Therapeutics (ATD).</p>		6.029	0.000	0.000
<p><b>Title:</b> 7) Therapeutics</p> <p><b>Description:</b> Bacterial Therapeutics: Identify, optimize, and evaluate potential therapeutic compounds effective against bacterial threat agents.</p> <p><b>FY 2012 Accomplishments:</b></p>		3.753	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Evaluated Protein Design Process optimized anthrax capsule depolymerase (CapD) in murine challenge models of Anthrax infection. Transitioned data package demonstrating efficacy of FDA approved compounds against lethal challenge of aerosolized <i>Y. pestis</i> in nonhuman primate models. Conducted studies to determine efficacy against FDA approved compounds against <i>Burkholderia</i>, <i>Francisella tularensis</i> in murine animal models. Evaluated small molecule inhibitors targeting <i>Y. pestis</i> ATPase enzyme in small animal models. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med Bio-Therapeutics (ATD).</p>				
<p><b>Title:</b> 8) Transformational Medical Technologies</p> <p><b>Description:</b> Multiagent (Broad Spectrum) Medical Countermeasures: Continues efforts previously funded under the Transformational Medical Technologies Initiative to develop candidate countermeasures for Hemorrhagic Fever Virus (HFV) and Intracellular Bacterial Pathogen (IBP). Focuses on the initiation and completion of preclinical studies for candidate countermeasures, to include safety, toxicity, efficacy, and scalability work in accordance with the product's intended use. The ability to formulate Good Manufacturing Practices (GMP), pilot lots and further mature promising drug candidates will be the focus of activities in this capability area. The preclinical drug discovery process culminates in the submission of an Investigational New Drug (IND) application to the Food and Drug Administration (FDA), to determine if candidate countermeasures are suitable for safety evaluation in humans.</p> <p><b>FY 2012 Accomplishments:</b> Continued pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the HFV, IBP, and Emerging Infectious Disease (EID product) pipelines. Continued planning for Phase 1 clinical trials and additional studies for INDs as required by the FDA prior to safety evaluation in humans. Continued the development of animal models for future advanced development of MCMs currently in the S&amp;T phase of development, incorporating feedback from the FDA and Services into requirements. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med-Bio Therapeutics.</p>		38.603	0.000	0.000
<p><b>Title:</b> 9) Transformational Medical Technologies</p> <p><b>Description:</b> Development of Platform Technologies: Continues efforts previously funded under the Transformational Medical Technologies Initiative. Platform Technologies are stand alone enabling technologies that support MCM development and when strategically aligned, provide a system of systems response capability to an adverse biological event - from the identification of an unknown pathogen to the development of an approved countermeasure ready for delivery to the Warfighter and the nation. The enabling technologies are divided into five platform areas: Pathogen Characterization, Target Identification, Countermeasure Discovery, Countermeasure Evaluation, and Bioinformatics. Efforts focus on advanced technology and development activities for Platform Technologies to include the maturation of components that will begin the process of integrating a countermeasure response pipeline. Off-the-shelf technologies will be identified, evaluated, and refined to demonstrate the ability to provide drug</p>		53.592	0.000	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TB3: <i>MEDICAL BIOLOGICAL DEFENSE (ATD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
development capabilities. Advanced manufacturing platforms will continue to mature and the technology application will focus on the type of specific therapeutics under development.			
<b><i>FY 2012 Accomplishments:</i></b> Invested to fund Bio-Surveillance efforts and integrated stand-alone platforms into system-wide capabilities. Continued development of rapid drug discovery and development platform technologies, and built upon early success to fully integrate the entire system using robust bioinformatics capabilities, validated the integrated bioinformatics platform. Increased investment to mature and accelerate manufacturing platform technologies for biological drugs to comply with regulatory guidelines. Supported compliance and quality measures that are mandatory for future FDA submissions. Fully integrated pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation platform areas into a rapid response capability supported by a centralized bioinformatics capability that link geographically separated performers from government agencies, industry and academia. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med-Bio Diagnostics.			
<b>Accomplishments/Planned Programs Subtotals</b>	168.684	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2014</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To</b>	
<b>Line Item</b>			<b>Base</b>	<b>OCO</b>	<b>Total</b>					<b>Complete</b>	<b>Total Cost</b>
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	121.170	133.254	122.936		122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	197.907	212.056	263.443		263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>				<b>PROJECT</b>			
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>					PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>				TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>	-	21.182	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.182

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TC3) 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. Analytical stability studies, safety and efficacy screening, and preclinical toxicology studies are performed prior to full-scale development of promising pretreatment or treatment drug compounds. Entry of candidate pretreatment/prophylaxes, therapeutics, and diagnostic technologies into advanced development (i.e., efforts funded in Budget Activities 4 and 5) is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) application and licensure processes, as well as Department of Defense (DoD) acquisition regulations. Categories for this project include Pretreatments, Diagnostics, and Therapeutics to address Chemical Warfare Agent (CWA) and Non-Traditional Agents (NTAs) exposure. In FY13, all non-NTA research in this Project (TC3) was re-aligned to Project TM3 - Techbase Medical Defense (ATD). All NTA-dedicated research in this Project was re-aligned to Project NT3 - Techbase Non-Traditional Agents Defense (ATD).

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) Diagnostics</p> <p><b>Description:</b> Diagnostic Technologies: 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.</p> <p><b>FY 2012 Accomplishments:</b> Expanded the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med Chem - Diagnostics.</p>	0.876	0.000	0.000
<p><b>Title:</b> 2) Chem Diagnostics NTA</p> <p><b>Description:</b> Chem Diagnostics NTA: 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.</p> <p><b>FY 2012 Accomplishments:</b></p>	1.431	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continued evaluation of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. In FY13, all research in this area was re-aligned to Project NT3 - Techbase Med Defense - NTA Diagnostics.				
<b>Title:</b> 3) Pretreatments  <b>Description:</b> Nerve Agent, Pretreatments: Develop pretreatments that provide protection against all organophosphorous nerve agents. The 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. For enzyme approaches, one molecule of catalytic bioscavenger should be capable of detoxifying numerous molecules nerve agents resulting in the capability for a small quantity of catalytic bioscavenger to protect against a large dose of nerve agent.  <b>FY 2012 Accomplishments:</b> Refined methods and expression systems for large-scale production and purification of enzymes. Continued testing of improved pretreatment delivery methods and retention approaches in animal models, including physiologically based pharmacokinetics (PBPK). Developed binding proteins in animal models for safety and efficacy. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Medical Defense - Pretreatments.		1.367	0.000	0.000
<b>Title:</b> 4) Chem Pretreatments NTA  <b>Description:</b> Chem Pretreatments NTA: 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 nerve agents resulting in the capability for a small quantity of catalytic bioscavenger to protect against a large dose of nerve agent.  <b>FY 2012 Accomplishments:</b> Tested improved nerve agent enzyme pretreatment delivery methods and retention approaches in animal models, including physiologically based pharmacokinetics. Further developed binding proteins in animal models for safety and efficacy. In FY13, all research in this area was re-aligned to Project NT3 - Techbase Medical Defense - NTA Pretreatments		0.880	0.000	0.000
<b>Title:</b> 5) Therapeutics  <b>Description:</b> Cutaneous and Ocular: Focuses on minimizing injuries to dermal and ocular tissues resulting from exposure to chemical warfare agents (CWA). This work is designed to support 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.  <b>FY 2012 Accomplishments:</b>		3.645	0.000	0.000



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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Determined the most effective cell-based approaches to facilitate healing of skin and eye wounds due to sulfur mustard exposure. Completed evaluation of potential wound healing products for advanced development. Evaluated candidate approaches to decontaminate penetrating wounds that have been exposed to CWAs. Continued to assess molecular biology approaches in animal models to treat skin and eye injuries as a result of sulfur mustard exposure. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Med Chem - Therapeutics.</p> <p><b>Title:</b> 6) Therapeutics</p> <p><b>Description:</b> Neurologic: 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.</p> <p><b>FY 2012 Accomplishments:</b> Continued animal model evaluation of novel and/or FDA approved drugs not previously tested for treatment of nerve agent exposure. Continued development of animal models related to nerve agent exposure. Maintained core capabilities for standardization of in vitro and in vivo testing of therapeutic candidates. In FY13, all research in this area was re-aligned to Project TM3 - Techbase Medical Chemical - Therapeutics</p>	4.355	0.000	0.000
<p><b>Title:</b> 7) Chem Therapeutics NTA</p> <p><b>Description:</b> Non-Traditional Agents (NTA): 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.</p> <p><b>FY 2012 Accomplishments:</b> Completed characterization of a novel therapeutic for manufacturability and pharmacology. Established formulation for safety testing and stability. This work continues efforts initiated in prior years within the Project TC3 - Chemical Therapeutics capability area. In FY13, all research in this area was re-aligned to Project NT3 - Techbase Medical Defense - NTA Therapeutics.</p>	8.628	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	21.182	0.000	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TC3: <i>MEDICAL CHEMICAL DEFENSE (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	7.697	0.000	2.000		2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	2.336	9.642	55.087		55.087	58.342	57.675	47.340	28.759	0.000	259.181

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TE3: <i>TEST &amp; EVALUATION (ATD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TE3: <i>TEST &amp; EVALUATION (ATD)</i>	-	10.306	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.306

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TE3) supports the development of test and evaluation methodologies and protocols as new science and technology efforts are discovered and transitioned to advanced development programs. It includes methodology development for chemical and biological defense test and evaluation capabilities, with an emphasis on Non Traditional Agents (NTAs). These methodologies support development testing and operational testing with regard to advanced development programs that have unique chemical and biological defense requirements. These new methodologies and testing capabilities include the development of protocol and standards for use of chemical and biological simulants. In FY13, all NTA-dedicated research was re-aligned to Project NT3 - Techbase Non-Traditional Agents Defense (ATD). All non-NTA related T&E efforts were completed in FY12.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Test and Evaluation (T&E)  <b>Description:</b> Test and Evaluation, Information System Technology: Develop test and evaluation technologies and processes in support of Information System Technology activities.  <b>FY 2012 Accomplishments:</b> Continued the development of CBRN data management capabilities for test and evaluation, with emphasis on enabling access to information for analysis within CBDP systems performance models. Enhanced ability to evaluate decontaminants and decontamination systems by continuing to develop simulation capabilities for decontamination processes.	4.649	0.000	0.000
<b>Title:</b> 2) Test and Evaluation (T&E) NTA  <b>Description:</b> Develops test and evaluation technologies and processes in support of NTA activities.  <b>FY 2012 Accomplishments:</b> Completed facility design efforts by conducting large particle dissemination development and proof of principle tests with several agents. Initiated select agent testing. In FY13, all research in this area was re-aligned to Project NT3 - Techbase Non-Med Test & Evaluation (NTA).	5.657	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	10.306	0.000	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TE3: <i>TEST &amp; EVALUATION (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing
• TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	14.458	4.994	15.671		15.671	20.408	15.872	13.044	11.044	Continuing	Continuing
• TE5: <i>TEST &amp; EVALUATION (EMD)</i>	16.235	6.394	26.202		26.202	20.033	20.200	15.700	14.200	Continuing	Continuing
• TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>	3.549	4.156	3.690		3.690	3.642	2.846	2.846	2.846	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 2014 Chemical and Biological Defense Program **DATE:** April 2013

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	-	0.000	182.330	122.717	-	122.717	99.930	107.506	123.790	126.110	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This 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.

In FY13, all research in Project (TB3) was re-aligned into Project TM3 - Techbase Medical Defense (ATD).

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Techbase Med Defense - Medical Countermeasures Initiative	0.000	19.237	16.000
<b>Description:</b> Medical Countermeasures Initiative (MCMi): 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.			
<b>FY 2013 Plans:</b> Further the 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 the			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		<b>PROJECT</b> TM3: <i>TECHBASE MED DEFENSE (ATD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
development of a plant-based virus-like particle (VLP) vaccine. Identify additional ex-vivo cell/tissue mimetics such as precision cut tissue slices to serve as predictive surrogates for accelerated MCM efficacy and safety evaluation.  <b>FY 2014 Plans:</b> 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 the development of a plant-based virus-like particle (VLP) vaccine. Identify additional ex-vivo cell/tissue mimetics such as precision cut tissue slices to serve as predictive surrogates for accelerated MCM efficacy and safety evaluation.				
<b>Title:</b> 2) Techbase Med Bio - Diagnostics  <b>Description:</b> Biosurveillance/Disease Surveillance: Integrate existing disparate military and civilian data sets into advanced warning systems, and leverage and enhance epidemiological models and algorithms for disease prediction, 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 agent-based epidemiological modeling, medical resource estimation and decision support tools. Focus on agent-based epidemiological modeling and fusion of disease surveillance data. This subject area was previously referred to as "Disease Surveillance/Epidemiological and Predictive Modeling".  <b>FY 2013 Plans:</b> Continue effort of 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. Funding for this research area was re-aligned from Tech Base Non-Med Defense - Modeling & Simulation (CB3).		0.000	1.550	0.000
<b>Title:</b> 3) Techbase Med Bio - Diagnostics  <b>Description:</b> Biological Diagnostic Assays and Reagents: 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. This subject area was previously referred to as "Biological Diagnostic Technologies".  <b>FY 2013 Plans:</b> Translate laboratory, data fusion informatic methodologies and specimen pipelines into robust and well-characterized signatures required to identify and bio-type emerging, re-emerging, and synthetic threat agent strains, identify antibiotic resistant mutations and phenotypes, and therapeutic and vaccine response markers. Develop and transition thermostable reagents/scale-up protocols to advanced development for use in austere biosurveillance environments. Transition agent characterization dossiers		0.000	32.649	10.945

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>to developers of: Medical Counter Measures, microbial forensics capabilities, and assays developers to augment existing biosurveillance infrastructure performing vector surveys, zoonotic epidemiology and provide a direct link between medical diagnostic, disease surveillance and MCM development. Submit pre-Emergency Use application data packages to FDA Office for in vitro diagnostics. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TB3) and Techbase Med Bio - TMT Platform Technologies (TB3).</p> <p><b>FY 2014 Plans:</b> Continue to develop 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. Develop and transition an additional thermostable reagents/scale-up protocols to advanced development for use in austere biosurveillance environments. Collaborate with the Centers for Disease Control (CDC) to improve diagnostic and surveillance capabilities needed to counter traditional, engineered, emerging and biological threats.</p>			
<p><b>Title:</b> 4) Techbase Med Bio - Diagnostics</p> <p><b>Description:</b> Next Generation Technologies: Development of next generation diagnostic technologies including portable diagnostic platforms, highly parallel and informative testing formats, and nanotechnology applications. Development of novel assay formats and hardware solutions to enable point of need diagnostic capabilities, allowing for rapid guidance of medical decisions.</p> <p><b>FY 2013 Plans:</b> Perform pre-clinical validation studies in relevant animal models and human/zoonotic disease states to stratify pre-symptomatic biomarker panel positive and negative predictive values. Funding for this research area was re-aligned in FY13 from Tech Base Med Bio - Diagnostics (TB3) and Techbase Med Bio - TMT Platform Technologies (TB3). In FY14 the funding for this research is consolidated into Biological Diagnostic Device Platforms.</p>	0.000	14.770	0.000
<p><b>Title:</b> 5) Techbase Med Bio - Diagnostics</p> <p><b>Description:</b> Biological Diagnostic Device Platforms: 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><b>FY 2013 Plans:</b> Provide documented assessments of candidate devices potential for transition to advanced developers to support the deployment of point of care diagnostic capabilities. Verify 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</p>	0.000	17.880	33.849

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
previously characterized pathologies. Funding for this research area was re-aligned from Tech Base Med Bio - Diagnostics (TB3) and Techbase Med Bio - TMT Platform Technologies (TB3).  <b>FY 2014 Plans:</b> Continue to develop candidate devices for potential transition to advanced developers to support the deployment of point of care diagnostic capabilities. 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 prototype(s) that confers the ability to identify and type novel infectious agents as a function of their relationship to previously characterized pathologies.				
<b>Title:</b> 6) Techbase Med Bio - Pretreatments  <b>Description:</b> Pretreatments - Bacterial/Toxin Vaccines: Evaluates the best single agent bacterial and toxin vaccines for effectiveness against aerosol challenge in large animal models.  <b>FY 2013 Plans:</b> Deliver final data package for Ricin vaccine. Funding for this research area was re-aligned from Tech Base Med Bio - Pretreatments (TB3).  <b>FY 2014 Plans:</b> Coordinate with the advanced developer to fulfill S&T needs in support of the Ricin vaccine transition.		0.000	0.510	0.459
<b>Title:</b> 7) Techbase Med Bio - Pretreatments  <b>Description:</b> Pretreatments - Viral Vaccines: 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. The purpose of developing these animal models is to support pivotal animal studies under the "Animal Rule".  <b>FY 2013 Plans:</b> Coordinate with the advanced developer to fulfill S&T needs in support of the Filovirus vaccine transition. Continue development of Filovirus and Alphavirus immunological assays to support product development. Complete Phase I clinical trial of Venezuelan Equine Encephalitis (VEE) DNA vaccine delivered by in vivo electroporation via intra-muscular or intra-dermal administration. Complete pre-clinical studies on a trivalent VEE, Eastern and Western Equine Encephalitis (EEE, WEE) DNA formulation. Continue to conduct pre-clinical studies of the Alphavirus replicon vaccine in coordination with the advanced developer. Continue the development of animal models for Alphaviruses (EEE and WEE), and Filoviruses (Ebola Sudan, Ebola Zaire, Ebola Bundibugyo, and Marburg), to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure. Although the Filovirus		0.000	19.038	17.135



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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>vaccines transitioned in FY11, work will continue on the selected candidate(s) to fill knowledge gaps. Funding for this research area was re-aligned from Tech Base Med Bio - Pretreatments (TB3).</p> <p><b>FY 2014 Plans:</b> Continue development of Alphavirus immunological assays to support product development. 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. Continue the development of animals models for Alphaviruses (EEE and WEE), to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure.</p>			
<p><b>Title:</b> 8) Techbase Med Bio - Pretreatments</p> <p><b>Description:</b> Pretreatments - Vaccine Platforms and Research Tools: Conducts 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. Identifies correlates of protection in humans, and predicts the success of lead vaccine candidates in humans. Work conducted under Vaccine Platforms and Research Tools are distinct from those performed under Viral Vaccines because the focus is on the use of novel technologies to support vaccine candidates, not on the vaccine candidates themselves. Vaccine Platforms and Research Tools utilize novel technologies to stabilize advanced vaccine candidates as well as alternative delivery modalities.</p> <p><b>FY 2013 Plans:</b> Continue formulation studies to produce a thermo-stable, spray-dried formulation of an advanced vaccine candidate. Continue to evaluate stabilization technologies that provide thermal stability to multiple classes of vaccines such as viral vectored vaccines and subunit protein vaccines. Continue to evaluate alternative (needle-free) vaccine delivery technologies such as inhalers or skin patches for the delivery of mature vaccine candidates. Utilize clinical samples from Filovirus or Alphavirus outbreaks in multiple international locations to help define clinically relevant correlates of immunity. Funding for this research area was re-aligned from Tech Base Med Bio - Pretreatments (TB3).</p> <p><b>FY 2014 Plans:</b> Continue formulation studies to produce a thermo-stable, spray-dried formulation of an advanced vaccine candidate. Continue to evaluate stabilization technologies that provide thermal stability to multiple classes of vaccines such as viral vectored vaccines and subunit protein vaccines. Continue to evaluate alternative (needle-free) vaccine delivery technologies such as inhalers or skin patches for the delivery of mature vaccine candidates. Utilize clinical samples from Filovirus or Alphavirus outbreaks in multiple international locations to help define clinically relevant correlates of immunity.</p>	0.000	3.200	2.880
<p><b>Title:</b> 9) Techbase Med Bio - Therapeutics</p>	0.000	6.100	17.773

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Viral Therapeutics: Identify, optimize and evaluate potential therapeutic candidates effective against designated viral threat agents.</p> <p><b>FY 2013 Plans:</b> Continue evaluation of immunotherapies for Filoviruses in non-human primate models. Develop immune modulators for the treatment of Filovirus infection. Continue screening program to determine efficacy of FDA approved compounds against emerging infectious diseases (i.e. Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus). Continue pre-clinical research required to submit Investigational New Drug (IND) applications to the FDA for additional products or additional product indications to refresh the viral therapeutics product pipeline. Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB3).</p> <p><b>FY 2014 Plans:</b> Evaluate immunotherapies for Filoviruses in non-human primate models. Continue development of antibody-based therapies for Filovirus infections. Continue screening program to determine efficacy of FDA approved compounds against emerging infectious diseases. Evaluate FDA-approved host-directed tyrosine kinase inhibitors for efficacy against Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus, and Orthopoxvirus. 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. In FY14, research previously conducted under the Multiagent Broad Spectrum Countermeasure thrust area will be transitioned into the Viral Therapeutics program under BA3 Techbase Med Defense - Bio CM (TM3).</p>				
<p><b>Title:</b> 10) Techbase Med Bio - Therapeutics</p> <p><b>Description:</b> Bacterial Therapeutics: Identify, optimize and evaluate potential therapeutic compounds effective against bacterial threat agents.</p> <p><b>FY 2013 Plans:</b> Evaluate FDA approved compounds for efficacy in non-human primate models against aerosolized challenge of <i>Y. pestis</i> and <i>F. tularensis</i>. Develop small molecule inhibitors of the electron transport chain and the ATP synthase bacterial biothreat agents. Perform pharmacokinetic studies of humanized CapD in mouse models. Continue 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. Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB3).</p> <p><b>FY 2014 Plans:</b> Evaluate FDA approved compounds for efficacy in non-human primate models against aerosolized challenge of <i>Y. pestis</i> and <i>F. tularensis</i>. Continue development of small molecule inhibitors of the electron transport chain and the ATP synthase bacterial biothreat agents. Perform pharmacokinetic studies of human CapD in mouse models. Continue pre-clinical research required to</p>		0.000	5.100	17.170

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
submit IND applications to the FDA for additional products or additional product indications to refresh the bacterial therapeutics product pipeline. In FY14, research previously conducted under the Multiagent Broad Spectrum Countermeasure thrust area will be transitioned into the Bacterial Therapeutics program under BA3 Techbase Med Defense - Bio CM (TM3).				
<p><b>Title:</b> 11) Techbase Med Bio - Therapeutics</p> <p><b>Description:</b> Toxin Therapeutics: Identify, optimize and evaluate potential therapeutic candidates effective against biological toxin threat agents.</p> <p><b>FY 2013 Plans:</b> Evaluate small molecule non-peptidic inhibitors for pharmacokinetic and toxicology profiles. Test novel small molecule inhibitors in mouse model of BoNT A intoxication for efficacy. Funding for this research area was re-aligned from Tech Base Med Bio - Therapeutics (TB3).</p> <p><b>FY 2014 Plans:</b> Continue evaluation of small molecule non-peptidic inhibitors for pharmacokinetic and toxicology profiles. Test novel small molecule inhibitors in mouse model of BoNT A intoxication for efficacy.</p>		0.000	1.645	0.521
<p><b>Title:</b> 12) Techbase Med Bio - Therapeutics</p> <p><b>Description:</b> Multiagent (Broad Spectrum) Medical Countermeasures: Continues efforts previously funded under the Transformational Medical Technologies Initiative to develop candidate countermeasures for Hemorrhagic Fever Virus (HFV) and Intracellular Bacterial Pathogen (IBP). Focuses on the initiation and completion of preclinical studies for candidate countermeasures, to include safety, toxicity, efficacy, and scalability work in accordance with the product's intended use. The ability to formulate Good Manufacturing Practices (GMP), pilot lots and further mature promising drug candidates will be the focus of activities in this capability area. The preclinical drug discovery process culminates in the submission of an Investigational New Drug (IND) application to the Food and Drug Administration (FDA), to determine if candidate countermeasures are suitable for safety evaluation in humans. In FY14, research under this thrust area will be transitioned into the Bacterial and Viral Therapeutics program under BA3 Techbase Med Defense - Bio CM (TM3).</p> <p><b>FY 2013 Plans:</b> Continue pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the Hemorrhagic Fever Virus (HFV), Intracellular Bacterial Pathogen (IBP) and Emerging Infectious Disease (EID) product pipelines. Continue planning for Phase 1 clinical trials and additional studies for INDs as required by the FDA prior to safety evaluation in humans. Continue the development of animal models for future advanced development of MCMs currently</p>		0.000	48.225	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
in the S&T phase of development, incorporating feedback from the FDA and Services into requirements. Funding for this research area was re-aligned from Tech Base Med Bio - Transformational Medical Technologies (TB3).				
<p><b>Title:</b> 13) Techbase Med Chem - Diagnostics</p> <p><b>Description:</b> Chemical Diagnostics: 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.</p> <p><b>FY 2013 Plans:</b> Expand the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs. Funding for this research area was re-aligned from Tech Base Med Chem - Diagnostics (TC3).</p> <p><b>FY 2014 Plans:</b> Continue to expand the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs in clinical samples.</p>		0.000	0.469	0.460
<p><b>Title:</b> 14) Techbase Med Chem - Pretreatments</p> <p><b>Description:</b> Chemical Medical Pretreatments - Nerve Agent, Pretreatments: Develop pretreatments that provide protection against all organophosphorous nerve agents. The 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. For enzyme approaches, one molecule of catalytic bioscavenger should be capable of detoxifying numerous molecules nerve agents resulting in the capability for a small quantity of catalytic bioscavenger to protect against a large dose of nerve agent.</p> <p><b>FY 2013 Plans:</b> Continue characterization of recombinant human butyrylcholinesterase (rHuBChE) bioscavenger product of selected alternative expression systems. Funding for this research area was re-aligned from Tech Base Med Chem - Pretreatments (TC3).</p>		0.000	4.122	0.000
<p><b>Title:</b> 15) Techbase Med Chem - Therapeutics</p> <p><b>Description:</b> Chemical Medical Therapeutics - Neurologic: 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.</p> <p><b>FY 2013 Plans:</b></p>		0.000	7.633	5.525

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Complete studies developing appropriate animal models. Maintain core capability for in vitro and in vivo testing. This core capability for product testing, using standardized methodologies under well-controlled laboratory conditions (e.g., Good Laboratory Practice or GLP), is needed to ensure quality and consistency of study test data submitted in applications to FDA in support of regulatory actions. Funding for this research area was re-aligned from Tech Base Med Chem - Therapeutics (TC3).			
<b>FY 2014 Plans:</b> Continue efforts supporting regulatory science to facilitate FDA licensure including in vitro and in vivo testing.			
<b>Title:</b> 16) Techbase Med Defense - Rad CM	0.000	0.202	0.000
<b>Description:</b> Radiological Medical Countermeasures: Develops medical countermeasures to protect the Warfighter against radiological/nuclear exposure. The Department of Defense is the only governmental agency currently developing medical prophylaxis to protect Warfighters or other responders in the event of a radiological incident.			
<b>FY 2013 Plans:</b> Further explore the development of a biodosimetry hand-held diagnostic device that is minimally invasive, accurate, rapid, high-throughput and suitable for medical triage. Funding for this research area was re-aligned from Tech Base Med Rad - Radiation Countermeasures (TR3).			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	182.330	122.717

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing
• MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	121.170	133.254	122.936		122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	7.697	0.000	2.000		2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	197.907	212.056	263.443		263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	2.336	9.642	55.087		55.087	58.342	57.675	47.340	28.759	0.000	259.181

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TM3: <i>TECHBASE MED DEFENSE (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>	-	1.431	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.431

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TR3) funds advanced technology development of medical countermeasures against radiological exposure. Specifically, innovative technical approaches will be used to develop, refine, and transition promising products to advanced development efforts to mitigate health consequences resulting from Acute Radiation Exposure (ARS) and Delayed Effects of Acute Radiation Exposure (DEARE). Promising products and pertinent science and technology data will be used to support Investigational New Drug (IND) applications and Food and Drug Administration (FDA) licensure processes, with an emphasis on the development of pretreatments to protect military responders in the event of a radiological incident. Research efforts and data are collaboratively shared with other government agencies so that more mature and promising product candidates will be quickly transitioned to advanced development efforts. In FY13, all research in this Project (TR3) was re-aligned to Project TM3 - Techbase Medical Defense (ATD).

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) Radiological Medical Countermeasures	1.431	0.000	0.000
<b>Description:</b> Radiation Medical Countermeasures: Develops medical countermeasures to protect the Warfighter against radiological/nuclear exposure. The Department of Defense is the only governmental agency currently developing medical prophylaxis to protect Warfighters or other responders in the event of a radiological incident.			
<b>FY 2012 Accomplishments:</b> Completed mechanism of action studies for potential therapeutics for radiological exposure. In FY13, all Project TR3 research was re-aligned into Techbase Medical Defense - RAD CM (TM3).			
<b>Accomplishments/Planned Programs Subtotals</b>	1.431	0.000	0.000

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	0.000	118.208	98.111		98.111	104.361	102.546	99.523	103.441	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TR3: <i>MEDICAL RADIOLOGICAL DEFENSE (ATD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TR2: <i>MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	0.935	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.935
• TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	0.000	182.330	122.717		122.717	99.930	107.506	123.790	126.110	Continuing	Continuing
• MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>	0.000	4.050	0.000		0.000	0.000	0.000	0.000	8.610	Continuing	Continuing
• MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>	0.000	2.027	0.000		0.000	0.000	0.000	0.000	0.000	0.000	2.027

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A



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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>	-	0.000	0.000	6.706	-	6.706	6.257	6.575	8.196	7.852	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This 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 by: (1) improving Department of Defense (DoD) access to the life sciences to combat infectious disease regardless of its cause; (2) establishing and reinforcing DoD concept of operations (CONOPS) against the misuse of the life sciences; and (3) instituting a suite of coordinated DoD and interagency activities that collectively will help influence, identify, inhibit, and/or interdict those who seek to misuse the life sciences. 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 and demonstrates technologies and methods to restore assets such as mobile equipment, fixed sites, critical infrastructures, personal, and equipment to operational status as a result of having reduced or eliminated CBR contamination. 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) Experiment & Technology Demonstrations	0.000	0.000	6.706
<b>FY 2014 Plans:</b> Conduct technical and operational demonstrations for persistent and contagious bio agent scenarios in the US European Command Area of Responsibility (EUCOM AOR). Initiate bio-resiliency planning efforts in a second AOR. Conduct and complete a series of vignettes addressing sampling and analysis (to include forensics preparation), wide area decontamination and medical/epidemiological management. Complete Coalition Warfare Program science and technology (S&T) efforts with international partner in EUCOM AOR. Conduct a field experiment process to assess early technology capability contributions towards the WMD Elimination mission area, in collaboration with the CBDP Joint Combat Developer and with outcomes to support the creation of an initial capabilities document (ICD). Demonstrate decontamination technologies for the interior of airframes against bio			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	<b>PROJECT</b> TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
agents as part of a JCTD initiative with US TRANSCOM. Initiate analysis and market research for a complete facilities protection system that is rapidly deployable, to include threat detection, building hardening, and personal protection.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	6.706

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	97.530	44.331	53.901		53.901	55.042	59.834	66.483	66.214	Continuing	Continuing
• CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	23.838	20.034	18.091		18.091	19.224	18.348	20.621	19.960	Continuing	Continuing
• TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>	2.985	3.377	0.000		0.000	0.000	0.000	0.000	0.000	0.000	6.362

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
N/A

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>					<b>R-1 ITEM NOMENCLATURE</b>							
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>							
<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO<sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	201.871	179.023	196.237	-	196.237	186.892	157.824	109.957	82.327	Continuing	Continuing
CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	-	13.432	3.038	26.853	-	26.853	46.788	40.163	34.595	2.873	Continuing	Continuing
CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>	-	16.155	3.003	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.158
DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>	-	20.755	12.374	17.870	-	17.870	10.611	13.174	9.337	5.500	Continuing	Continuing
IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>	-	0.000	1.102	2.708	-	2.708	6.811	4.680	0.300	0.000	0.000	15.601
IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	-	5.219	13.831	8.199	-	8.199	2.845	0.360	0.100	0.100	Continuing	Continuing
MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	121.170	133.254	122.936	-	122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	-	7.697	0.000	2.000	-	2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	0.000	4.050	0.000	-	0.000	0.000	0.000	0.000	8.610	Continuing	Continuing
TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	-	14.458	4.994	15.671	-	15.671	20.408	15.872	13.044	11.044	Continuing	Continuing
TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>	-	2.985	3.377	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.362

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Chemical and Biological Defense Program DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**  
0400: *Research, Development, Test & Evaluation, Defense-Wide*  
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

**R-1 ITEM NOMENCLATURE**  
PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*

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. Projects within BA4 are structured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, individual and collective force protection, decontamination, and medical countermeasures. ACD&P is conducted for an array of chemical, biological, and toxin detection and warning systems providing early warning, collector concentrators, generic detection, improved reagents, and decontamination systems using solutions that will remove and/or detoxify contaminated materiel without damaging combat equipment, personnel, or the environment. CB sensors and diagnostics enhance the Departments environmental and medical surveillance efforts by improving the monitoring and surveillance of threats and forces preparing for and engaged in military operations. These efforts are required to enable military commanders and the Military Health System to prevent, treat, and mitigate threats to individual Service Members and military units. Integration of CB sensor and diagnostic data from the programs in this ACD&P will also be usable within the homeland security and Federal public health common operating pictures.

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

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

ACD&P also supports the development of updated test capabilities to evaluate Chemical, Biological, Radiological, and Nuclear Defense systems. Also included is the Techbase Technology Transition effort which validates high-risk/high-payoff technologies that could significantly improve Warfighter capabilities.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. Approximately \$92.9M supports the priority to "Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events." Approximately \$45.8M supports the priority to "Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities." Approximately \$124.0M supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents."

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

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	213.155	179.023	267.746	-	267.746
Current President's Budget	201.871	179.023	196.237	-	196.237
Total Adjustments	-11.284	0.000	-71.509	-	-71.509
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-8.354	0.000			
• SBIR/STTR Transfer	-2.930	0.000			
• Other Adjustments	0.000	0.000	-71.509	-	-71.509

**Change Summary Explanation**

Funding: FY14

-\$71.509M Other Adjustments (CA4 +\$7,050K; DE4 +\$7,623K; IP4 -\$1,000K; IS4 +\$2,527K; MB4 -\$71,566K; MC4 -\$14,947K; TE4 +\$2,900K; TT4 -\$4,096K)

Schedule: N/A

Technical: N/A

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program										<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>				<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>			
<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO <sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	-	13.432	3.038	26.853	-	26.853	46.788	40.163	34.595	2.873	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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. Individual efforts are: (1) Joint Biological Tactical Detection System (JBTDSD); (2) Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM) Increment 2; (3) Joint Standoff Detection System (JSDS); (4) Next Generation Chemical Detector (NGCD); and (5) Joint Biological Standoff Detection System (JBSDS) Increment 2.

The Joint Biological Tactical Detection System (JBTDSD) will integrate, test, and produce the first lightweight (less than 37 lbs), low cost biological surveillance system that will detect, collect, and identify biological warfare agent aerosols. JBTDSD will provide warning through the Joint Warning And Reporting Network (JWARN) and archive sample for follow-on analyses. JBTDSD will provide near real-time local audio and visual alarm for use by any Military Occupational Specialty (MOS). JBTDSD components will be man-portable, battery-operable, and easy to employ. JBTDSD will be used to provide notification of a hazard and enhanced battle space awareness to protect and preserve the force. When networked, JBTDSD will augment existing biological detection systems to provide a theater-wide seamless array capable of biological detection, identification and warning. Units equipped with JBTDSD will conduct biological surveillance missions to detect BWA aerosol clouds, collect a sample, and identify the agent to support time sensitive force protection decisions.

The Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM) Increment 2 efforts will evaluate existing and emerging technologies to provide improvement to chemical detection in water to meet Tri-Service Drinking Water Standards and to detect emerging threats in water.

The Joint Standoff Detection System (JSDS), a new start program, will provide near real-time detection of chemical and biological attacks/incidents at a standoff distance. The modular system will be tailorable to the Service and can be employed at Aerial Port of Debarkation (APOD)/Sea Port of Debarkation (SPOD), Forward Operating Base (FOB), and on multiple platforms to include: fixed site, aerostat, and ground systems. The system will be networked to allow for cueing of point sensor arrays. Additionally, Unmanned Aerial Vehicle (UAV) (as demonstrated in the WMD Aerial Collection System (WACS) Advanced Technology Demonstration (ATD))/ Unmanned Ground Vehicle (UGV) platforms could be integrated for sampling and identification. This schedule has been synchronized with the WACS ATD schedule to facilitate data exchange and possible excursions.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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The Next Generation Chemical Detector (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 CWATIC selectivity and sensitivity on multiple platforms as well as multiple environments. This sensor will improve detection, consequence management and reconnaissance, and weapons of mass destruction (WMD) interdiction capabilities.

The Joint Biological Standoff Detection (JBSDS) Increment 2 mission provided near real-time detection of biological attacks/incidents and standoff early detection/warning (Detect to Warn) of Biological Warfare Agents (BWAs) at fixed sites or in static mode on vehicles. This detect-to-warn capability allowed Commanders theater-wide initial early warning capability against BWA attacks. JBSDS 1 was the first standoff early warning biological detection system for the Joint Services. The system demonstrated the capability of providing standoff detection, ranging, tracking, of BWA aerosol clouds for advanced warning, reporting, and protection. The current JBSDS 1 systems was used for training to support JBSDS 2 concept of operations (CONOPs) development and could have been deployed upon receipt of an urgent need statement. JBSDS Increment 2 addressed the requirements beyond the JBSDS 1 interim system. Those key requirements were lower false alarm rate, day/night discrimination sensitivity, and a reduction in overall system size, weight, and power.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) JBTDS <b>FY 2012 Accomplishments:</b> Continued and completed Competitive Prototyping (CP) test and evaluation events.	0.774	0.000	0.000
<b>Title:</b> 2) JBTDS <b>FY 2012 Accomplishments:</b> Conducted technology readiness assessment of prototypes.	0.068	0.000	0.000
<b>Title:</b> 3) JBTDS <b>FY 2012 Accomplishments:</b> Initiated characterization and recreation of ten aerosol interferents for future SDD testing. <b>FY 2013 Plans:</b> Continue and finalize characterization and recreation of ten aerosol interferents for future SDD testing.	0.200	0.200	0.000
<b>Title:</b> 4) JBTDS <b>FY 2012 Accomplishments:</b> Initiated and completed modeling and simulation study.	0.265	0.000	0.000
<b>Title:</b> 5) JBTDS <b>FY 2012 Accomplishments:</b> Initiated and completed interferent method development for CP live agent testing.	0.114	0.000	0.000
<b>Title:</b> 6) JBTDS	3.577	1.319	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b><i>FY 2012 Accomplishments:</i></b> Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support.</p> <p><b><i>FY 2013 Plans:</i></b> Complete strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support.</p>				
<p><b><i>Title:</i></b> 7) JBTDS</p> <p><b><i>FY 2012 Accomplishments:</i></b> Initiated and completed Material Availability modeling for Sustainment Key Performance Parameter (KPP) in Capability Development Document (CDD).</p>		0.150	0.000	0.000
<p><b><i>Title:</i></b> 8) JCBRAWM Increment 2</p> <p><b><i>FY 2014 Plans:</i></b> Evaluate existing and emerging technologies to provide improvement to chemical detection in water and to detect emerging threats in water.</p>		0.000	0.000	0.200
<p><b><i>Title:</i></b> 9) JSDS</p> <p><b><i>FY 2014 Plans:</i></b> Initiate early prototype designs, conduct studies, and perform testing to support evaluation of technology concepts.</p>		0.000	0.000	5.500
<p><b><i>Title:</i></b> 10) JSDS</p> <p><b><i>FY 2014 Plans:</i></b> Establish program office to conduct strategic, tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, technical support, and milestone documentation.</p>		0.000	0.000	1.500
<p><b><i>Title:</i></b> 11) NGCD</p> <p><b><i>FY 2013 Plans:</i></b> Initiate program management, systems engineering, and Integrated Product Team (IPT) support and prepare for MS A.</p> <p><b><i>FY 2014 Plans:</i></b> Continue program management, systems engineering and IPT support.</p>		0.000	1.319	5.853
<p><b><i>Title:</i></b> 12) NGCD</p> <p><b><i>FY 2013 Plans:</i></b></p>		0.000	0.200	13.800



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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	
Initiate Request For Proposal (RFP) preparation.				
<b>FY 2014 Plans:</b> Award multiple contracts to develop competing prototypes and conduct Integrated Product Reviews (IPR).				
<b>Title:</b> 13) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Provided strategic/tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, technical support, and milestone documentation.	1.804	0.000	0.000	
<b>Title:</b> 14) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Completed agent performance assessment, cross section measurements, and agent variability testing.	2.677	0.000	0.000	
<b>Title:</b> 15) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Provided test planning and test support (continued simulant variability testing, aerosol modeling, testing, and relative humidity testing).	0.921	0.000	0.000	
<b>Title:</b> 16) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Initiated and completed algorithm enhancement/optimization and small cloud mapping Light Detection and Ranging (LiDAR) study/demo.	1.520	0.000	0.000	
<b>Title:</b> 17) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Initiated and completed user workshop on early warning of chemical and biological aerosol.	0.364	0.000	0.000	
<b>Title:</b> 18) JBSDS Increment 2 <b>FY 2012 Accomplishments:</b> Provided enhancements to support development of high priority efforts.	0.998	0.000	0.000	
<b>Accomplishments/Planned Programs Subtotals</b>	13.432	3.038	26.853	

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>	52.854	33.018	36.766		36.766	58.170	68.535	45.458	67.888	Continuing	Continuing
• JF0100: <i>JOINT CHEMICAL AGENT DETECTOR (JCAD)</i>	46.136	15.212	47.598		47.598	47.024	47.971	49.688	0.000	Continuing	Continuing
• JN0900: <i>NON TRADITIONAL AGENT DETECTION (NTAD)</i>	3.687	4.770	8.000		8.000	0.000	0.000	0.000	0.000	0.000	16.457
• MC0101: <i>CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)</i>	6.624	15.080	34.998		34.998	81.258	98.272	105.000	120.326	Continuing	Continuing
• MX0001: <i>JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)</i>	0.000	0.000	0.000		0.000	0.000	0.000	11.691	37.051	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

JBTDS

The JBTDS is being developed using an evolutionary acquisition strategy. JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology. The awards for competitive prototyping utilized best value approach via the competitive CBRNE mission support contract to three contractor teams. Full and open competition will be utilized at MS B for the SDD contract with options for Low Rate Initial Production and Full Rate Production. Coordination with other programs (Common Analytical Laboratory System and Next Generation Diagnostic System) is occurring to share information and leverage potential common identification technology solutions to the three programs.

JCBRAWM

Current effort is being conducted inhouse to address emerging threats in water and to enhance chemical detection capabilities to meet current Tri-Service Drinking Water Standards. Initial work focuses on determining viability of enhancements to existing kits through analysis of chemical processes. Results will provide data required to develop viable alternative approaches and to develop performance requirements for the Increment 2 program at MS A.

JSDS

JSDS will maximize the use of commercial and government off the shelf mature technologies with an expected start at Milestone B. Full and open competition will be utilized for the SDD phase of the program.

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NGCD

The NGCD will build upon the low volatility work conducted under JCAD in FY11 and FY12. The NGCD analysis of alternatives will be used to generate performance specifications that will support contracting for competitive prototype development. The goal for the initial stage of development will be to award multiple contracts for each variant of the NGCD and down select to one contractor per variant by Milestone B.

JBSDS

Program closed out in FY12.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSDS - HW S - Initiate early prototypes for technology evaluation	C/CPFF	TBD:	0.000	0.000		0.000		2.000	Mar 2014	-		2.000	Continuing	Continuing	0.000
** NGCD - HW S - Competitive Prototype System Design	C/CPIF	TBD:	0.000	0.000		0.000		13.800	Mar 2014	-		13.800	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		15.800		0.000		15.800			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBTD S - ES S - Technology Readiness Assessment	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.068	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES S - AMSAA Material Availability Modeling	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.150	Apr 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** NGCD - ES S - Initiate IPT Activity	MIPR	TBD:	0.000	0.000		0.300	Jun 2013	1.700	Dec 2013	-		1.700	Continuing	Continuing	0.000
** JBSDS - TD/D SB - Enhancement Developments	PO	Various:	0.000	0.998	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES S - Simulant Agent Variability Study (SAVS) Measurements	MIPR	Sandia National Laboratory (SNL):Albuquerque, NM	5.058	1.768	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
TD/D S - User workshop facilitation	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	1.120	0.300	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TD/D SB - R&T Team for SAVS testing	MIPR	Various:	0.668	0.300	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			6.846	3.584		0.300		1.700		0.000		1.700			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBTD S - DTE S - Competitive Prototyping Testing	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.402	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - CP Testing	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	0.170	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - CP Testing #2	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	0.000	0.202	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Modeling and simulation study	MIPR	Institute for Defense Analysis (IDA):Alexandria, VA	0.000	0.265	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Characterization of aerosol interferents	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.200	Feb 2012	0.200	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Interferent method development	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	0.000	0.114	Apr 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JSDS - OTHT S - Initiate testing to support evaluation of technology concepts	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	0.000		0.000		3.500	Mar 2014	-		3.500	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** NGCD - OTHT SB - Test & Evaluation IPT	MIPR	Various:	0.000	0.000		0.150	Mar 2013	0.600	Dec 2013	-		0.600	Continuing	Continuing	0.000
** JBSDS - OTHT SB - Developmental Testing Support	MIPR	Dugway Proving Ground (DPG):Dugway, UT	2.154	0.460	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
OTHT SB - Agent performance analysis and Technology Performance Analysis	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	2.500	1.161	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Technology Demo	C/CPFF	Various:	0.000	1.254	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE C - DT Test Support	C/CPFF	Camber Corp.:Huntsville, AL	1.825	0.110	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			6.479	4.338		0.350		4.100		0.000		4.100			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBTDS - PM/MS SB - Program Management and System Engineering Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	3.577	Feb 2012	1.319	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JCBRAWM - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.200	Mar 2014	-		0.200	Continuing	Continuing	0.000
** JSDS - PM/MS SB - Management/Systems Engineering/Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.500	Dec 2013	-		1.500	Continuing	Continuing	0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
** JBTDS - Competitive Prototyping Testing	██████████																											
JBTDS - Capability Development Document					██████████																							
JBTDS - TEMP					████																							
JBTDS - MS B Decision					████																							
JBTDS - SDD Contract Award									████																			
JBTDS - PDR									████																			
JBTDS - DT 1									████████████████████																			
JBTDS - CDR									████																			
JBTDS - DT 2													██████████															
JBTDS - Milestone C																	████											
JBTDS - PQT																					████████████████████							
** JCBRAWM Incr. 2 - Technology Evaluation									████																			
JCBRAWM Incr. 2 - Prototype Evaluation													████████████████████															
JCBRAWM Incr. 2 - Milestone A																	████											
** JSDS - Initiate early prototypes for technology evaluation									████████████████████																			
JSDS - Materiel Development Decision (MDD)									████																			
JSDS - Milestone B													████															
JSDS - Engineering & Manufacturing Development																	████████████████████											
** NGCD - Milestone A					████																							
NGCD - Prototype Development Contract Award									████																			
NGCD - Initial Prototype Build									████████████████████																			
NGCD - Spectrum Collection & Algorithm Test													████████████████████															



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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Final Prototype Build																												
NGCD - Final Prototype Test																												
NGCD - Preliminary Design Review																												
NGCD - Milestone B																												
NGCD - SDD Contract Award																												
** JBSDS - Program Closeout																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JBTDS - Competitive Prototyping Testing	1	2012	1	2013
JBTDS - Capability Development Document	2	2013	3	2013
JBTDS - TEMP	3	2013	3	2013
JBTDS - MS B Decision	3	2013	3	2013
JBTDS - SDD Contract Award	1	2014	1	2014
JBTDS - PDR	2	2014	2	2014
JBTDS - DT 1	2	2014	3	2015
JBTDS - CDR	4	2014	4	2014
JBTDS - DT 2	1	2016	3	2016
JBTDS - Milestone C	3	2017	3	2017
JBTDS - PQT	4	2017	3	2018
** JCBRAWM Incr. 2 - Technology Evaluation	2	2014	2	2014
JCBRAWM Incr. 2 - Prototype Evaluation	1	2015	4	2016
JCBRAWM Incr. 2 - Milestone A	1	2017	1	2017
** JSDS - Initiate early prototypes for technology evaluation	1	2014	4	2015
JSDS - Materiel Development Decision (MDD)	2	2014	2	2014
JSDS - Milestone B	4	2015	4	2015
JSDS - Engineering & Manufacturing Development	1	2016	4	2018
** NGCD - Milestone A	3	2013	3	2013
NGCD - Prototype Development Contract Award	2	2014	2	2014
NGCD - Initial Prototype Build	2	2014	1	2015
NGCD - Spectrum Collection & Algorithm Test	2	2015	1	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NGCD - Final Prototype Build	2	2016	3	2016
NGCD - Final Prototype Test	4	2016	2	2017
NGCD - Preliminary Design Review	2	2017	2	2017
NGCD - Milestone B	3	2017	3	2017
NGCD - SDD Contract Award	3	2017	3	2017
** JBSDS - Program Closeout	1	2012	3	2013

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>	-	16.155	3.003	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.158
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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) 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.

Included in this Project are: Technology development of the Common Analytical Laboratory System (CALs) to include evaluation and selection of subsystems (analytical detection, laboratory information management, data fusion, engineering controls) as well as development of a set of modular designed configurations for system level prototyping utilizing open system architecture. In addition, it provides for the validation and demonstration of desired functional capabilities.

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

	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) CALS - System Engineering and Program Management  <b>Description:</b> 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/program, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).  <b>FY 2012 Accomplishments:</b> Continued System Engineering and Program Management to provide engineering support and program and technical guidance to ongoing System Integration Laboratory efforts. Maintained oversight of component test completion, and contract actions in support of modular design concepts and preparation for Preliminary Design Review.  <b>FY 2013 Plans:</b>	3.793	1.332	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue System Engineering and Program Management to provide engineering support and program and technical guidance to ongoing System Integration Laboratory efforts. Maintain oversight of component test completion, and contract actions in support of modular design concepts and conduct the Preliminary Design Review.				
<p><b>Title:</b> 2) CALS - System Integration Laboratory</p> <p><b>Description:</b> Establishment of a System Integration laboratory to assist in the mitigation of programmatic risk and facilitate rapid evaluation of technology, technical approaches and constraints, configuration designs, and logistical issues.</p> <p><b>FY 2012 Accomplishments:</b> Continued efforts to mitigate program risk through the use of a system integration laboratory tool set designed to facilitate the rapid evaluation of technology configuration designs and logistical issues.</p> <p><b>FY 2013 Plans:</b> Complete efforts to mitigate program risk through the use of a system integration laboratory tool set designed to facilitate the rapid evaluation of technology configuration designs and logistical issues.</p>		0.356	0.122	0.000
<p><b>Title:</b> 3) CALS - Development Engineering - Component Evaluation and Subsystem Design</p> <p><b>Description:</b> Studies, analysis, design development, evaluation, testing, and redesign for the system component(s) during system development. Includes the design efforts of preparing specifications, engineering drawings, parts lists, wiring diagrams, test planning and scheduling, analysis of test results, data reduction, report preparations and establishment of reliability, maintainability, and quality assurance control requirements.</p> <p><b>FY 2012 Accomplishments:</b> Continued subsystem component evaluation and module design of alternative system module and system configurations.</p> <p><b>FY 2013 Plans:</b> Complete subsystem component evaluation and module design of alternative system module and system configurations.</p>		8.940	1.263	0.000
<p><b>Title:</b> 4) CALS - Production Engineering and Planning</p> <p><b>Description:</b> Efforts to ensure the producibility of the developmental materiel system, item, or component. Involves engineering tasks necessary to ensure timely, efficient, and economic production of essential materiel and is primarily of a planning nature. Includes efforts related to development of the Technical Data Package (TDP), quality assurance (QA) plans, and special production processes to assess producibility.</p> <p><b>FY 2012 Accomplishments:</b></p>		0.834	0.286	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Continued producibility, quality assurance and logistics studies required to support development of modules for the CALS.			
<b><i>FY 2013 Plans:</i></b> Complete producibility, quality assurance, logistics studies and conduct the preliminary design review required to support development of modules for the CALS.			
<b><i>Title:</i></b> 5) CALS - Biodetection - Development and Integration  <b><i>Description:</i></b> Development of an integration effort to incorporate biodetection capability with other detection and response technologies to include collective protection while leveraging a variety of associated technologies.	2.232	0.000	0.000
<b><i>FY 2012 Accomplishments:</i></b> Initiated development of an integrated biodetection system capability.			
<b>Accomplishments/Planned Programs Subtotals</b>	16.155	3.003	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CM5: <i>HOMELAND DEFENSE (EMD)</i>	8.984	9.952	18.533		18.533	1.600	0.000	0.000	0.000	0.000	39.069
• JS0004: <i>WMD - CIVIL SUPPORT TEAMS (WMD CST)</i>	15.065	24.025	13.314		13.314	11.657	13.282	13.306	6.027	Continuing	Continuing
• JS0005: <i>COMMON ANALYTICAL LABORATORY SYSTEM (CAL S)</i>	0.000	0.000	0.957		0.957	34.991	54.411	64.946	33.008	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

CALS

The Common Analytical Laboratory System (CAL S) will follow an incremental approach designed to address known joint force capability requirements for Chemical, Biological, Radiological and Nuclear (CBRN) detection which includes Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs), Chemical Warfare Agents (CWAs), Biological Warfare Agents (BWAs). CAL S will address situational awareness by leveraging efforts underway with Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) to the extent possible. CAL S will accommodate these component requirements within a modular and scalable concept framework.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - HW SB - Module Design	C/CPIF	Science Applications International Corporation (SAIC):Abingdon, MD	0.000	0.000		0.632	Dec 2012	0.000		-		0.000	0.000	0.632	0.000
HW SB - CALS Production Engineering and Planning	Various	Various:	0.000	0.834	Sep 2012	0.286	Dec 2012	0.000		-		0.000	0.000	1.120	0.000
SW S - CALS Biodetection - Development & Integration	C/CPFF	AGENTASE LLC:Pittsburgh, PA	0.000	2.232	Nov 2012	0.000		0.000		-		0.000	0.000	2.232	0.000
<b>Subtotal</b>			0.000	3.066		0.918		0.000		0.000		0.000	0.000	3.984	0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - ES S - Engineering Support System - CALS	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	2.442	Mar 2012	0.866	Mar 2013	0.000		-		0.000	0.000	3.308	0.000
ES S - System Integration Laboratory Support	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.356	Mar 2012	0.122	Mar 2013	0.000		-		0.000	0.000	0.478	0.000
<b>Subtotal</b>			0.000	2.798		0.988		0.000		0.000		0.000	0.000	3.786	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - OTH C - Analytical Detection Component Testing	C/CPIF	MRIGlobal:Kansas City, MO	0.000	8.940	Mar 2012	0.631	Dec 2012	0.000		-		0.000	0.000	9.571	0.000





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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - CALS Component Downselect and Evaluation	██████████																											
CALS - CALS Preliminary Design Review					████																							
CALS - CALS Milestone B									████																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> CM4: <i>HOMELAND DEFENSE (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CALS - CALS Component Downselect and Evaluation	2	2012	2	2013
CALS - CALS Preliminary Design Review	2	2013	2	2013
CALS - CALS Milestone B	3	2013	3	2013

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>	-	20.755	12.374	17.870	-	17.870	10.611	13.174	9.337	5.500	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This ACD&P 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.

This funding supports the Decontamination Family of Systems (DFoS) in FY14.

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 that includes equipment to improve decontamination processes and decontaminant solutions to meet the capability gaps for decontaminating Non-Traditional Agent (NTA) and Chemical and Biological Warfare Agents (CBWA) from personnel, equipment, vehicle interiors/exterior, terrain, and fixed facilities. DFoS has five initial efforts established to address some of the requirements of the ConMit ICD: the Joint Sensitive Equipment Wipe (JSEW), the General Purpose Decontaminant (GPD), the Contamination Indicator Decontamination Assurance System (CIDAS), Coatings, and Dial-A-Decon.

JSEW will provide immediate/operational decontamination capabilities for sensitive equipment in hostile and non-hostile environments that have been exposed to chemical agents/contamination. The JSEW will decrease the level of gross chemical agent contamination from 10 g/m<sup>2</sup> to less than or equal to 1 g/m<sup>2</sup> in support of thorough decontamination on sensitive equipment. In addition, the JSEW program will investigate the potential for NTA compatibility of JSEW prototypes.

GPD 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.

CIDAS will provide a contamination indicator/decontamination assurance technology and an applicator for use on tactical vehicles, shipboard surfaces, and crew-served and individual weapons in hostile and non-hostile environments that have been exposed to traditional and non-traditional chemical contamination.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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The Coatings effort will provide one or more of the following types of coatings: barrier coatings, strippable coatings, reactive coatings, and sealants, for use on tactical vehicles, shipboard surfaces, and crew-served and individual weapons in hostile and non-hostile environments that may be exposed to CB contamination.

The Dial-A-Decon effort will provide an adjustable decontamination formulation/mixing system that is generated for point-of-use based on user input of agent threat, actual field conditions, and type of water available. Dial-A-Decon decontaminants will provide 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 CB contamination.

Additionally, the DFoS Program funded the Contaminated Human Remains Pouch (CHRP) effort in FY12. The CHRP is a recovery and containment system which will protect personnel from the hazards associated with handling human remains that are potentially contaminated with Chemical, Biological, Radiological, and Nuclear (CBRN) agents and Toxic Industrial Materials (TIM) without posing additional risk to the handlers or the environment.

The Joint Platform Interior Decontamination (JPID) program will provide decontamination capabilities for interiors of vehicles, ships, fixed-site facilities, mobile maintenance facilities, aircraft, and sensitive equipment inherent to the platform during air, ground, and sea operations in hostile and non-hostile environments that have been exposed to CBRN agents/contamination. To accommodate the array of Service mission sets, the potential for varying system and/or technology configurations may be required. The JPID Preferred System Concept (PSC) may consist of multiple solution sets that provide increments of capability or one solution to address the various platforms and threats identified under the program.

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) DFoS - Non-Traditional Agent (NTA)</p> <p><b>FY 2012 Accomplishments:</b> Conducted development of NTA efforts to include initial studies and modeling for effluent decontamination; conducted chemical efficacy and material compatibility for chemical decontaminants; evaluated decontamination wipes for NTA decontamination on equipment.</p> <p><b>FY 2013 Plans:</b> Continue NTA efforts to include material compatibility testing, environmental testing, and accelerated aging for decontamination assurance spray, chemical decontaminant, decontamination wipes, effluent decontamination, and strippable/sealant coatings.</p>	7.339	3.500	0.000
<p><b>Title:</b> 2) DFoS - CIDAS</p> <p><b>FY 2012 Accomplishments:</b> Initiated engineering, testing and logistics planning and contract documentation to support technology development of CIDAS.</p> <p><b>FY 2013 Plans:</b> Begin Developmental Testing (DT) for the CIDAS program to include indication level, material compatibility, and Environmental, Safety, and Occupational Health (ESOH).</p>	0.633	1.819	0.000
<p><b>Title:</b> 3) DFoS - CIDAS</p>	0.000	0.504	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>FY 2013 Plans:</b> Award contract(s) to purchase 1,920 gallons of CIDAS technology (at \$200 per gallon) and 12 CIDAS technology applicators (at \$10 thousand each) for Competitive Prototype (CP) testing.				
<b>Title:</b> 4) DFoS - JSEW		2.081	2.329	0.000
<b>FY 2012 Accomplishments:</b> Initiated DT for the JSEW program to include chemical efficacy, material compatibility, equipment degradation, durability and byproducts analysis, and Environmental, Safety, and Occupational Health (ESOH).				
<b>FY 2013 Plans:</b> Continue DT for the JSEW program to include efficacy (hot/cold/relative humidity), accelerated shelf-life, Individual Protective Equipment (IPE) compatibility, detector compatibility, and human factors assessment.				
<b>Title:</b> 5) DFoS - JSEW		0.115	0.450	0.000
<b>FY 2012 Accomplishments:</b> Awarded 4 contracts to deliver 3,480 prototype JSEW systems (at \$6 to \$44 each) for CP testing.				
<b>FY 2013 Plans:</b> Purchase 2,600 prototype JSEW systems (at \$17 each) for CP testing and develop programmatic documentation.				
<b>Title:</b> 6) DFoS - GPD		4.938	3.302	0.000
<b>FY 2012 Accomplishments:</b> Initiated DT for the GPD program to include kinetics/byproducts, material compatibility, thorough efficacy (contact and vapor), accelerated aging, and ESOH.				
<b>FY 2013 Plans:</b> Continue DT for the GPD program to include high/low temperature kinetics, pot life, efficacy (complex surfaces), accelerated shelf-life, IPE, and detector compatibility.				
<b>Title:</b> 7) DFoS - GPD		0.059	0.470	0.000
<b>FY 2012 Accomplishments:</b> Awarded 7 contracts to purchase 350 gallons of prototype GPDs (at \$25 to \$336 per gallon) for CP testing.				
<b>FY 2013 Plans:</b> Purchase 13,280 gallons of prototype GPDs (at \$35 per gallon) for CP testing and develop programmatic documentation.				
<b>Title:</b> 8) DFoS - Contaminated Human Remains Pouch (CHRP)		1.498	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>FY 2012 Accomplishments:</b> Released Request for Proposal (RFP) to assess vendor capabilities against Service requirements and obtained bid samples for CP testing. Completed CP testing that included vapor live agent swatch, durability, safety, and human factors assessment of the CHRP to identify viable candidates for Engineering and Manufacturing Development (EMD) phase testing. Continued research studies to identify what efficiencies could be gained for EMD testing, based on chemical and physical properties of CBRN agents.				
<b>Title:</b> 9) DFoS - Coatings		0.000	0.000	1.998
<b>FY 2014 Plans:</b> Finalize engineering, testing and logistics planning, and contract documentation to support technology development of strippable Coatings effort. Begin DT efforts to include chemical efficacy, agent reactivity, materials compatibility, and ESOH assessment.				
<b>Title:</b> 10) DFoS - Coatings		0.000	0.000	0.500
<b>FY 2014 Plans:</b> Purchase 60 gallons of prototype Coatings (at \$200 per gallon) for CP testing and data item deliverables.				
<b>Title:</b> 11) DFoS - Dial-A-Decon (Formulation)		0.000	0.000	2.471
<b>FY 2014 Plans:</b> Finalize engineering, testing and logistics planning, and contract documentation to support Dial-A-Decon effort. Begin DT efforts to include chemical efficacy (materials compatibility) for field adjustable formulations and ESOH analysis.				
<b>Title:</b> 12) DFoS - Dial-A-Decon (Formulation)		0.000	0.000	0.300
<b>FY 2014 Plans:</b> Award contracts to purchase 500 gallons of point-of-use formulation (at \$35 per gallon) for CP testing and data item deliverables.				
<b>Title:</b> 13) DFoS - CIDAS		0.000	0.000	3.921
<b>FY 2014 Plans:</b> Complete Competitive Prototype (CP)/Developmental Testing (DT) to include indication level, material compatibility, human factors assessment, accelerated shelf-life, logistics analysis, Environmental, Safety, and Occupational Health (ESOH) and Individual Protective Equipment (IPE) compatibility.				
<b>Title:</b> 14) DFoS - GPD		0.000	0.000	5.298
<b>FY 2014 Plans:</b> Complete Developmental Testing (DT) to include expanded efficacy, packaging/Military Standard (MIL-STD) 810G, shelf-life, and Product Verification Testing (PVT).				
<b>Title:</b> 15) DFoS - GPD		0.000	0.000	0.692

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2014 Plans:</i></b> Purchase 6,000 gallons of prototype GPDs (at \$35 per gallon) for CP testing and data item deliverables.			
<b><i>Title:</i></b> 16) DFoS - JSEW	0.000	0.000	2.490
<b><i>FY 2014 Plans:</i></b> Continue Developmental Testing (DT) to include expanded efficacy, materials and detector compatibility as well as additional Individual Protective Equipment (IPE) and shelf-life testing.			
<b><i>Title:</i></b> 17) DFoS - JSEW	0.000	0.000	0.200
<b><i>FY 2014 Plans:</i></b> Purchase 1,000 JSEW test assets (at \$17 each) for DT and data item deliverables.			
<b><i>Title:</i></b> 18) JPID	2.092	0.000	0.000
<b><i>FY 2012 Accomplishments:</i></b> Completed Large Scale Storage and Operations Area (LSSOA) test article effort and program management.			
<b><i>Title:</i></b> 19) JPID	2.000	0.000	0.000
<b><i>FY 2012 Accomplishments:</i></b> Supported high priority requirements to advance technologies for the Special Operations community.			
<b>Accomplishments/Planned Programs Subtotals</b>	20.755	12.374	17.870

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>	0.000	9.324	2.412		2.412	8.506	17.961	17.417	31.827	Continuing	Continuing
• JD0050: <i>DECONTAMINATION FAMILY OF SYSTEMS (DFoS)</i>	0.000	0.506	0.000		0.000	4.450	9.754	16.337	28.356	Continuing	Continuing
• JD0063: <i>CONTAMINATED HUMAN REMAINS POUCH (CHRP)</i>	0.000	0.000	0.000		0.000	1.553	1.542	1.114	0.000	0.000	4.209

**Remarks**



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>

**D. Acquisition Strategy**

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. A multi-phased Analysis of Alternatives (AoA) is being conducted to identify and evaluate the operational effectiveness of potential material solutions to satisfy Service requirements. The first two efforts being evaluated under the AoA are Coatings and Dial-A-Decon. Both of these efforts will employ Competitive Prototyping (CP) to facilitate the identification and evaluation of technologies that can meet the Initial Capabilities Document (ICD) requirements. The JSEW program employs competitive prototyping to facilitate the evaluation of technologies. Candidates will be evaluated from competing vendor prototypes to determine optimal JSEW systems. The JSEW program will continue following an evolutionary acquisition strategy; employing a CP effort to facilitate the identification and evaluation of mature technologies that can meet the JSEW Capabilities Development Document (CDD) requirements. The GPD program employs competitive prototyping to facilitate the evaluation of technologies. Seven contracts were awarded for competing vendors to provide prototype GPDs. Candidates will be evaluated to determine optimal GPD systems to satisfy CBRN user needs. The CIDAS program employs competitive prototyping to facilitate the identification and evaluation of technologies. A request for proposal will solicit industry using a full and open competition best value contract strategy for technologies capable of meeting the CIDAS requirements. It is anticipated that multiple contracts will be awarded for competing vendors to provide CIDAS technologies for Technology Development activities.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** DFoS - HW S - UNS Effluent Decon for NTA Contaminated Run-off	C/FFP	TBD:	0.000	0.000		0.200	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - UNS NTA Strippable/Sealant Coatings	C/FFP	TBD:	0.000	0.000		0.200	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Contamination Indicator/Decon Assurance System (CIDAS)	C/FFP	Various:	0.000	0.000		0.504	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - General Purpose Decon (GPD)	C/FFP	Various:	0.000	0.059	May 2012	0.470	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Joint Sensitive Equipment Wipes (JSEW)	C/FFP	Various:	0.000	0.115	Mar 2012	0.450	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Dial-A-Decon	C/FFP	TBD:	0.000	0.000		0.000		0.300	Apr 2014	-		0.300	Continuing	Continuing	0.000
HW S - Coatings	C/FFP	TBD:	0.000	0.000		0.000		0.400	Mar 2014	-		0.400	Continuing	Continuing	0.000
** DFoS GPD - HW S - General Purpose Decon (GPD)	C/FFP	TBD:	0.000	0.000		0.000		0.692	Dec 2013	-		0.692	Continuing	Continuing	0.000
** DFoS JSEW - HW S - Joint Sensitive Equipment Wipe (JSEW)	C/FFP	TBD:	0.000	0.000		0.000		0.200	Jan 2014	-		0.200	Continuing	Continuing	0.000
** JPID - HW S - Advanced Technologies	Allot	US Special Operations Command:Tampa, FL	0.000	2.000	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	2.174		1.824		1.592		0.000		1.592			0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** DFoS - TD/D S - DFOS IPT Technical Support	MIPR	Various:	0.000	1.056	Dec 2011	1.000	Jan 2013	1.000	Jan 2014	-		1.000	Continuing	Continuing	0.000
TD/D S - CHRP IPT Technical Support	MIPR	Various:	0.000	0.331	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** DFoS CIDAS - TD/D SB - IPT Technical Support	MIPR	Various:	0.000	0.000		0.000		0.700	Jan 2014	-		0.700	Continuing	Continuing	0.000
** DFoS GPD - ES S - IPT Technical Support	MIPR	Various:	0.000	0.000		0.000		1.000	Jan 2014	-		1.000	Continuing	Continuing	0.000
** DFoS JSEW - ES S - IPT Technical Support	MIPR	Various:	0.000	0.000		0.000		0.650	Jan 2014	-		0.650	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	1.387		1.000		3.350		0.000		3.350			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** DFoS - DTE S - UNS NTA Decon Assurance Spray	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.500	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - UNS NTA Chemical Decon	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	3.454	Mar 2012	0.800	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - UNS NTA Equipment Wipe	C/FFP	Battelle Memorial Institute:Columbus, OH	0.000	1.322	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - UNS NTA Effluent Decon for NTA Contaminated Run-off	C/CPFF	TBD:	0.000	0.000		0.800	May 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - UNS NTA Strippable / Sealant Coatings	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.500	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DTE S - General Purpose Decon (GPD)	MIPR	Various:	0.000	1.366	Feb 2012	1.906	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Joint Sensitive Equipment Wipes (JSEW)	MIPR	Various:	0.000	0.820	Feb 2012	1.048	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE SB - Contamination Indication/Decontamination Assurance System (CIDAS)	MIPR	Various:	0.000	0.000		0.838	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - CHRP	MIPR	Various:	0.000	0.061	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - General Purpose Decon (GPD) #2	C/FFP	Battelle Memorial Institute:Columbus, OH	0.000	1.781	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Coatings	MIPR	TBD:	0.000	0.000		0.000		0.598	Feb 2014	-		0.598	Continuing	Continuing	0.000
DTE SB - Dial-A-Decon	MIPR	TBD:	0.000	0.000		0.000		0.421	Apr 2014	-		0.421	Continuing	Continuing	0.000
DTE S - Joint Service Equipment Wipe (JSEW)	C/FFP	Battelle Memorial Institute:Columbus, OH	0.000	0.396	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE S - Contaminated Human Remains Pouch (CHRP)	C/FFP	Battelle Memorial Institute:Columbus, OH	0.000	0.575	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** DFoS CIDAS - DTE S - Contamination Indicator Decontamination Assurance System (CIDAS)	MIPR	TBD:	0.000	0.000		0.000		1.436	Dec 2013	-		1.436	Continuing	Continuing	0.000
** DFoS GPD - DTE S - General Purpose Decon (GPD)	MIPR	TBD:	0.000	0.000		0.000		2.100	Jan 2014	-		2.100	Continuing	Continuing	0.000
** DFoS JSEW - DTE S - Joint Sensitive Equipment Wipe (JSEW)	MIPR	TBD:	0.000	0.000		0.000		0.840	Dec 2013	-		0.840	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	9.775		6.392		5.395		0.000		5.395			0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** DFoS - PM/MS S - DFoS Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	0.000	5.327	Oct 2011	3.158	Oct 2012	2.550	Oct 2013	-		2.550	Continuing	Continuing	0.000
** DFoS CIDAS - PM/MS S - Program Management, Integrated Product Team, and Technical Support	MIPR	Various:	0.000	0.000		0.000		1.785	Dec 2013	-		1.785	Continuing	Continuing	0.000
** DFoS GPD - PM/MS S - Program Management, Integrated Product Team, and Technical Support	MIPR	Various:	0.000	0.000		0.000		2.198	Oct 2013	-		2.198	Continuing	Continuing	0.000
** DFoS JSEW - PM/MS S - Program Management, Integrated Product Team, and Technical Support	MIPR	Various:	0.000	0.000		0.000		1.000	Oct 2013	-		1.000	Continuing	Continuing	0.000
** JPID - PM/MS S - Program Management Support, Integrated Product Team and Technical Support and close-out LSSDA test article effort.	MIPR	Various:	0.000	2.092	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	7.419		3.158		7.533		0.000		7.533			0.000
<b>Project Cost Totals</b>			0.000	20.755		12.374		17.870		0.000		17.870			0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	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 Chemical Decon Downselect	█																															
DFoS - NTA Chemical Decon Coupon Efficacy, Material Compatibility and Detector Compatibility Testing	█																															
DFoS - NTA Chemical Decon Wipe	█																															
DFoS - NTA Chemical Decon Operational Assessment																																
DFoS - NTA Chemical Decon Capabilities and Limitations Memo																																
DFoS - NTA Decon Assurance Spray Operational Assessment																																
DFoS - NTA Decon Assurance Spray Capabilities and Limitations Memo																																
DFoS - NTA Decon Assurance Spray Interference and Compatibility testing																																
DFoS - Effluent Decon for NTA Contaminated Run-off Modeling and Simulation Analysis																																
DFoS - Effluent Decon for NTA Contaminated Run-off Transition to DFoS/Milestone Decision																																
DFoS - Coatings MS A																																
DFoS - Coatings Competitive Prototyping																																
DFoS - Coatings PDR																																
DFoS - Coatings TEMP																																
DFoS - Coatings MS B																																
DFoS - Coatings CDR																																
DFoS - Coatings DT																																
DFoS - Coatings MS C																																

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Coatings OT																												
DFoS - Dial-A-Decon MS A																												
DFoS - Dial-A-Decon Competitive Prototyping																												
DFoS - Dial-A-Decon PDR																												
DFoS - Dial-A-Decon TEMP																												
DFoS - Dial-A-Decon MS B																												
DFoS - Dial-A-Decon CDR																												
DFoS - Dial-A-Decon DT																												
DFoS - Dial-A-Decon MS C																												
DFoS - Dial-A-Decon OT																												
** DFoS CIDAS - CPI Testing																												
DFoS CIDAS - PDR																												
DFoS CIDAS - CDD																												
DFoS CIDAS - TEMP																												
DFoS CIDAS - MS B																												
DFoS CIDAS - CDR																												
DFoS CIDAS - DT																												
DFoS CIDAS - MS C/LRIP																												
DFoS CIDAS - LRIP																												
DFoS CIDAS - OT																												
DFoS CIDAS - FRP																												
** DFoS GPD - CPI Testing																												
DFoS GPD - MRA																												
DFoS GPD - CPII Testing																												
DFoS GPD - System Requirements/Design Review																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 GPD - CDD									■																			
DFoS GPD - DT									■	■	■	■																
DFoS GPD - TEMP										■																		
DFoS GPD - System Verification Review											■																	
DFoS GPD - MS C														■														
DFoS GPD - LRIP														■														
DFoS GPD - OT														■	■	■												
DFoS GPD - FRP																			■									
DFoS GPD - IOC																										■		
** DFoS JSEW - CPI testing			■	■	■	■																						
DFoS JSEW - System Requirements/Design Review										■																		
DFoS JSEW - CPII Testing										■	■	■	■															
DFoS JSEW - CDD											■																	
DFoS JSEW - DT											■	■	■	■														
DFoS JSEW - TEMP												■																
DFoS JSEW - System Verification Review												■																
DFoS JSEW - MS C/LRIP															■													
DFoS JSEW - LRIP															■													
DFoS JSEW - OT															■	■	■											
DFoS JSEW - FRP																				■								
DFoS JSEW - IOC																										■		



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** DFoS - NTA Chemical Decon Downselect	2	2012	2	2012
DFoS - NTA Chemical Decon Coupon Efficacy, Material Compatibility and Detector Compatibility Testing	2	2012	2	2013
DFoS - NTA Chemical Decon Wipe	3	2012	2	2013
DFoS - NTA Chemical Decon Operational Assessment	2	2013	2	2013
DFoS - NTA Chemical Decon Capabilities and Limitations Memo	2	2013	3	2013
DFoS - NTA Decon Assurance Spray Operational Assessment	2	2013	2	2013
DFoS - NTA Decon Assurance Spray Capabilities and Limitations Memo	2	2013	3	2013
DFoS - NTA Decon Assurance Spray Interference and Compatibility testing	2	2013	2	2014
DFoS - Effluent Decon for NTA Contaminated Run-off Modeling and Simulation Analysis	3	2013	3	2014
DFoS - Effluent Decon for NTA Contaminated Run-off Transition to DFoS/Milestone Decision	3	2015	4	2017
DFoS - Coatings MS A	2	2014	2	2014
DFoS - Coatings Competitive Prototyping	2	2014	3	2015
DFoS - Coatings PDR	3	2015	3	2015
DFoS - Coatings TEMP	3	2015	3	2015
DFoS - Coatings MS B	1	2016	1	2016
DFoS - Coatings CDR	1	2016	1	2016
DFoS - Coatings DT	2	2016	2	2017
DFoS - Coatings MS C	1	2018	1	2018
DFoS - Coatings OT	2	2018	4	2018
DFoS - Dial-A-Decon MS A	3	2014	3	2014
DFoS - Dial-A-Decon Competitive Prototyping	4	2014	2	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
DFoS - Dial-A-Decon PDR	3	2016	3	2016
DFoS - Dial-A-Decon TEMP	3	2016	3	2016
DFoS - Dial-A-Decon MS B	1	2017	1	2017
DFoS - Dial-A-Decon CDR	2	2017	2	2017
DFoS - Dial-A-Decon DT	2	2017	2	2018
DFoS - Dial-A-Decon MS C	2	2018	2	2018
DFoS - Dial-A-Decon OT	3	2018	4	2018
** DFoS CIDAS - CPI Testing	3	2013	2	2014
DFoS CIDAS - PDR	3	2014	3	2014
DFoS CIDAS - CDD	3	2014	3	2014
DFoS CIDAS - TEMP	3	2014	4	2014
DFoS CIDAS - MS B	1	2015	1	2015
DFoS CIDAS - CDR	2	2015	2	2015
DFoS CIDAS - DT	3	2015	3	2016
DFoS CIDAS - MS C/LRIP	1	2017	1	2017
DFoS CIDAS - LRIP	2	2017	2	2018
DFoS CIDAS - OT	3	2017	1	2018
DFoS CIDAS - FRP	2	2018	2	2018
** DFoS GPD - CPI Testing	3	2012	1	2013
DFoS GPD - MRA	2	2013	2	2013
DFoS GPD - CPII Testing	2	2013	1	2014
DFoS GPD - System Requirements/Design Review	3	2013	3	2013
DFoS GPD - CDD	1	2014	1	2014
DFoS GPD - DT	1	2014	4	2014
DFoS GPD - TEMP	2	2014	2	2014

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
DFoS GPD - System Verification Review	3	2014	3	2014
DFoS GPD - MS C	1	2015	1	2015
DFoS GPD - LRIP	1	2015	1	2015
DFoS GPD - OT	1	2015	4	2015
DFoS GPD - FRP	1	2016	1	2016
DFoS GPD - IOC	1	2018	1	2018
** DFoS JSEW - CPI testing	3	2012	1	2013
DFoS JSEW - System Requirements/Design Review	2	2013	2	2013
DFoS JSEW - CPII Testing	2	2013	1	2014
DFoS JSEW - CDD	4	2013	4	2013
DFoS JSEW - DT	4	2013	3	2014
DFoS JSEW - TEMP	2	2014	2	2014
DFoS JSEW - System Verification Review	2	2014	2	2014
DFoS JSEW - MS C/LRIP	4	2014	4	2014
DFoS JSEW - LRIP	4	2014	4	2014
DFoS JSEW - OT	4	2014	2	2015
DFoS JSEW - FRP	3	2015	3	2015
DFoS JSEW - IOC	3	2017	3	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>	-	0.000	1.102	2.708	-	2.708	6.811	4.680	0.300	0.000	0.000	15.601
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project supports the ACD&P of the following efforts:

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.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) JSGPM (ARPI)	0.000	1.102	2.708
<b>FY 2013 Plans:</b> Verification of technologies data transition of component base filter media from Tech Base. Verification of TICs criteria and test methodology. Testing of performance specifications.			
<b>FY 2014 Plans:</b> 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. Investigate various applications of nanofiber particulate media.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	1.102	2.708

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	13.325	15.971	26.296		26.296	13.672	17.292	9.411	8.522	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• JI0003: <i>JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)</i>	71.214	48.466	77.343		77.343	81.212	88.029	113.681	109.434	0.000	589.379
• MA0401: <i>CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)</i>	0.000	10.376	13.772		13.772	12.948	17.101	17.101	17.101	0.000	88.399

**Remarks**

**D. Acquisition Strategy**

JSGPM

The JSGPM 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.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - HW C - Filter Prototyping	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.100	Feb 2013	0.000		-		0.000	0.000	0.100	0.000
HW C - Filter Prototyping	C/CPIF	TBD:	0.000	0.000		0.000		1.000	Feb 2014	-		1.000	0.000	1.000	0.000
<b>Subtotal</b>			0.000	0.000		0.100		1.000		0.000		1.000	0.000	1.100	0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - ES C - Engineering Design Services	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.100	Feb 2013	0.550	Feb 2014	-		0.550	0.000	0.650	0.000
<b>Subtotal</b>			0.000	0.000		0.100		0.550		0.000		0.550	0.000	0.650	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - DTE C - Prototype Testing	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.514	Feb 2013	0.550	Nov 2013	-		0.550	0.000	1.064	0.000
<b>Subtotal</b>			0.000	0.000		0.514		0.550		0.000		0.550	0.000	1.064	0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - ARPI Integration Testing																												
JSGPM - TIC Filter TECH Transition																												
JSGPM - ARPI TD Contract Award																												
JSGPM - TIC Prototype Development (JSTO Technology 1)																												
JSGPM - TIC Filter Testing (JSTO Technology 1)																												
JSGPM - Prototype Development (JSTO Technology 2)																												
JSGPM - Prototype Testing (JSTO Technology 2)																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSGPM - ARPI Integration Testing	2	2012	4	2012
JSGPM - TIC Filter TECH Transition	4	2012	4	2012
JSGPM - ARPI TD Contract Award	1	2013	1	2013
JSGPM - TIC Prototype Development (JSTO Technology 1)	2	2013	3	2014
JSGPM - TIC Filter Testing (JSTO Technology 1)	3	2014	1	2015
JSGPM - Prototype Development (JSTO Technology 2)	1	2015	4	2016
JSGPM - Prototype Testing (JSTO Technology 2)	1	2017	3	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	-	5.219	13.831	8.199	-	8.199	2.845	0.360	0.100	0.100	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This Project provides for Advanced Component Development and Prototypes (ACD&P).

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

The Joint Effects Model (JEM) is the DoD's only accredited model that has been operationally tested and deemed effective for predicting hazards associated with the release of contaminants into the environment. JEM is a software-only, ACAT III program that is being developed in separate increments and is capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents; high altitude releases, incident source prediction to include NTA events, urban CBRN/Toxic Industrial Hazard environments, human inhalation, contagious/infectious disease, population movements, efficacy of medical countermeasures, industrial transport; building interiors, and human performance degradation. Battlespace commanders and first responders must have a CBRN hazard prediction capability in order to make decisions that will minimize risks of CBRN contamination and enable them to continue mission operations. JEM operates in an integrated fashion with operational and tactical Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems, and in a standalone mode. JEM interfaces and communicates with the other programs such as JWARN, weather systems, intelligence systems, and various databases.

The Joint Warning and Reporting Network (JWARN) provides the Joint Forces with a comprehensive Integrated Early Warning, Analysis and Response capability to minimize the effects of hostile CBRN attacks, as well as accidents and incidents. It provides the operational capability to employ CBRN warning technology which collects, analyzes, identifies, locates, reports, and disseminates warnings. JWARN is compatible and integrated with Joint Service C4ISR Systems. JWARN transitions from platform specific Common Operating Environment (COE) standards to a Web-based Service Oriented Architecture (SOA). JWARN facilitates data transfer from additional sensors to tactical networks, increased automation of message handling, improved false alarm filtering, integration of enhanced route-planning calculators, and improved interoperability with additional C2 systems. JWARN is located in Command and Control Centers at the appropriate level and is be employed by CBRN defense specialists and other designated personnel. This employment transfers data automatically from existing and future sensors to provide commanders with the capability to support operational decision making in a CBRN environment. JWARN provides additional data processing to support the production of plans and reports, and access to specific CBRN information to improve the efficiency of limited CBRN personnel assets. JWARN integrates existing sensors into a sensor network or host

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>	<b>PROJECT</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>

C2 system, but does not provide the sensors that will be employed in the operating environment. The JWARN capability described above has been developed utilizing an incremental approach based on Service requirements and host system architecture.

JEM and JWARN Increment 2 will utilize the Joint Capabilities Integration and Development System (JCIDS) Manual prescribed Agile Information Technology Box "IT Box" concept for managing requirements for the follow-on increments of capability development. Use of the "IT Box" acquisition approach increases flexibility and will expedite fielding of Information System products through build decisions versus traditional DoD Milestone Decisions. Each program will use an Information Systems Initial Capabilities Document (IS ICD) to describe the overall development effort. After the IS ICD is approved, future requirement details will be captured in Requirements Definition Packages (RDP) and will be approved at the Functional Capability Board (FCB) level. In order to support an agile incremental approach, each program will ensure that the "IT Box" describes the entire IT program and not just a single increment. 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 SSA is a user developmental support and service organization focusing on development assistance and net-centric interoperability. The SSA provides the CBRN Warfighter with Joint Service solutions for Integrated Architectures, Information Assurance, Verification, Validation and Accreditation (VV&A) and Data Management; interoperable and integrated net-centric, Service-oriented, composable solutions for CBD; and infusion of latest technologies into programs of record. CBRN user community and related communities of interest have need for CBRN "plug and play" capability to allow interoperability and re-configurability across the enterprise. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other Service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

The SSA also directly supports various Bio-Surveillance efforts in training and logistics coordination. The SSA is re-baselining the entire Information Management/Information Technology (IM/IT) work-flow in support of the Bio-Surveillance Portal. By creating a catalog of portlets a user will be able to select the portlets that they need/use and will have access to data that is appropriate for them in a customizable format.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Title:</b> 1) JEM Increment 2</p> <p><b>Description:</b> Prototyping</p> <p><b>FY 2013 Plans:</b> Award competitive prototyping contracts for development and integration of JEM Increment 2 capabilities.</p> <p><b>FY 2014 Plans:</b> Continue competitive prototyping down-select and award option for development and integration of JEM Increment 2 capabilities.</p>	0.000	4.301	1.103
<p><b>Title:</b> 2) JEM Increment 2</p> <p><b>Description:</b> Test &amp; Evaluation (T&amp;E)</p>	0.000	1.626	0.646

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>FY 2013 Plans:</b> Initiate governmental development testing in support of competitive prototypes. Prepare T&E documentation for the Preliminary Design Review (PDR) and down-select decision.				
<b>FY 2014 Plans:</b> Continue governmental development testing in support of competitive prototyping contract and down-select. Prepare T&E documentation for the Preliminary Design Review (PDR) and down-select decision.				
<b>Title:</b> 3) JEM Increment 2 <b>Description:</b> Management Support		0.000	1.341	0.307
<b>FY 2013 Plans:</b> Provide program planning, financial management, contracting, schedule, and acquisition oversight support. Update JEM Integrated Master Schedule. Coordinate Preliminary Design Review (PDR) with stakeholders.				
<b>FY 2014 Plans:</b> Continue to provide program planning, financial management, contracting, schedule, and acquisition oversight support. Coordinate Preliminary Design Review (PDR), Critical Design Review (CDR), and Milestone B (MS B) with stakeholders.				
<b>Title:</b> 4) JEM Increment 2 <b>Description:</b> Technical Support		0.000	0.994	0.472
<b>FY 2013 Plans:</b> Prepare technical documentation to support the Preliminary Design Review (PDR). Develop Verification and Validation Plan for the next increment of JEM capability. Provide technical support during the competitive prototyping phase and requirements analysis processes.				
<b>FY 2014 Plans:</b> Continue preparation and review of technical documentation to support Milestone B (MS B) and the competitive prototyping contract down-select decision. Finalize Verification and Validation Plan for the next increment of JEM capability. Provide technical support during the competitive prototyping phase and technical assessment.				
<b>Title:</b> 5) JWARN - Increment 2 <b>Description:</b> Analysis of Alternatives (AoA) - Support and Analysis of Technical Alternatives (ATA) Evaluation		0.669	0.218	0.000
<b>FY 2012 Accomplishments:</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiated programmatic and Chemical, Biological, Radiological and Nuclear (CBRN) subject matter expertise supporting the AoA for the next increment of JWARN capabilities.  <b>FY 2013 Plans:</b> Complete evaluation of the AoA/ATA results and conduct a Technology Readiness Assessment of the candidate technologies. Analyze impact of implementing the emerging technologies into the JWARN architecture.				
<b>Title:</b> 6) JWARN Increment 2  <b>Description:</b> Prototyping  <b>FY 2013 Plans:</b> Initiate prototyping contracting efforts for JWARN to reduce technical risk, validate design and cost estimates as well as refine requirements.  <b>FY 2014 Plans:</b> Continue prototyping contracting efforts for JWARN to select candidate(s) for baseline development.		0.000	1.607	1.971
<b>Title:</b> 7) JWARN Increment 2  <b>Description:</b> Technology Demonstrations and User Assessments  <b>FY 2013 Plans:</b> Prepare for 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 developed software prototype(s).  <b>FY 2014 Plans:</b> Conduct 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 developed software prototype(s).		0.000	0.598	0.884
<b>Title:</b> 8) JWARN Increment 2  <b>Description:</b> Test and Evaluation  <b>FY 2012 Accomplishments:</b>		0.890	0.225	1.213

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Initiated evaluation, testing, and analysis of components and subsystems, to include Technology Readiness Assessments (TRAs), of Science and Technology (S&amp;T) capabilities targeted for the next Increment of JWARN software. Initiated development of the Test and Evaluation Strategy (TES) with the Test and Evaluation (T&amp;E) Working Integrated Product Team (WIPT).</p> <p><b>FY 2013 Plans:</b> Continue evaluation, testing, and analysis of components and subsystems, to include Technology Readiness Assessments (TRAs), of Science and Technology (S&amp;T) capabilities targeted for the next increment of JWARN software. Complete development of the Test and Evaluation Strategy (TES) with the Test and Evaluation (T&amp;E) Working Integrated Product Team (WIPT).</p> <p><b>FY 2014 Plans:</b> Initiate 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. Complete development of the Test and Evaluation Master Plan (TEMP).</p>				
<p><b>Title:</b> 9) JWARN Increment 2</p> <p><b>Description:</b> Development Contract</p> <p><b>FY 2012 Accomplishments:</b> Initiated contractual efforts to support Technology Development (TD) Phase efforts including: developing and releasing the Request for Proposal (RFP)/Performance Work Statement (PWS), and conducted source selection training.</p> <p><b>FY 2013 Plans:</b> Complete proposal evaluations, draft and finalize technical evaluation report for contract award and award contract to develop the next increment of capability.</p>		0.892	0.843	0.000
<p><b>Title:</b> 10) JWARN Increment 2</p> <p><b>Description:</b> Management Support</p> <p><b>FY 2012 Accomplishments:</b> Provided strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program.</p> <p><b>FY 2013 Plans:</b></p>		1.455	1.074	0.668

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program. <b>FY 2014 Plans:</b> Continue strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program.			
<b>Title:</b> 11) JWARN Increment 2 <b>Description:</b> Technical Support  <b>FY 2012 Accomplishments:</b> Provided requirements and engineering analysis and technical support preparing for JWARN development efforts by identifying critical technology elements, potential system designs, external interfaces and interoperability to determine end-to-end system performance needs of the system. Determined requirements for independent system verification, validation and class type accreditation efforts. <b>FY 2013 Plans:</b> Continue requirements and engineering analysis and technical support for JWARN development efforts. Initiate independent system verification, validation and class type accreditation efforts as required. <b>FY 2014 Plans:</b> Continue engineering and technical support JWARN development. Continue independent system verification, validation, and class type accreditation as required.	1.313	1.004	0.835
<b>Title:</b> 12) SSA Integrated Architecture <b>FY 2014 Plans:</b> Initiate required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs.	0.000	0.000	0.100
<b>Accomplishments/Planned Programs Subtotals</b>	5.219	13.831	8.199

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• IS5: <i>INFORMATION SYSTEMS (EMD)</i>	4.699	2.045	9.267		9.267	17.636	20.643	15.471	17.508	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	8.917	10.091	6.518		6.518	3.990	7.734	11.995	13.034	Continuing	Continuing
• G47101: <i>JOINT WARNING &amp; REPORTING NETWORK (JWARN)</i>	4.676	2.646	1.112		1.112	0.766	0.456	4.589	6.589	Continuing	Continuing
• JC0208: <i>JOINT EFFECTS MODEL (JEM)</i>	0.000	0.000	0.000		0.000	1.242	3.417	5.069	3.086	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

JEM

The program plans to award multiple development contracts in a competitive prototyping phase prior to downselecting a single JEM developer and integrator.

JWARN

JWARN Increment 2 will structure itself in conjunction with the JROC's IT Box concept. JWARN Increment 2 will incorporate all current and future technologies planned for incorporation into JWARN in their IS ICD. This will reduce future trips to the JROC for approval of improved capabilities and ultimately move the program away from incrementalization. Future JWARN development efforts will be acquired via a Request for Proposal (RFP) under full and open competition. Using full and open competitive procedures, a single contract will be awarded to the responsible offeror who provides the best value in maintaining current JWARN software and developing future JWARN software. This contract will apply a Cost-Plus-Award-Fee (CPAF) or Cost-Plus-Fixed-Fee (CPFF) pending results of discussion with the contracting office.

SSA

The SSA provides enterprise-wide services and coordination across all CBDP programs that contain data or software, or are capable of linking to the Global Information Grid (GIG). The SSA facilitates interoperability, integration, and supportability of existing and developing IT and National Security Systems (NSS). 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. (BA5 - System Development and Demonstration). 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. (BA7 - Operational Systems Development).



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - SW SB - JEM Increment 2 - Prototype development	C/CPFF	TBD:	0.000	0.000		4.301	Mar 2013	1.103	Mar 2014	-		1.103	Continuing	Continuing	0.000
** JWARN - SW SB - JWARN Increment 2 - Prototype development	SS/CPAF	TBD:	0.000	0.000		1.607	Mar 2013	1.971	Mar 2014	-		1.971	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		5.908		3.074		0.000		3.074			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - TD/D SB - JEM Increment 2 - Engineering support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.000		0.994	Mar 2013	0.472	Mar 2014	-		0.472	Continuing	Continuing	0.000
** JWARN - TD/D SB - JWARN Increment 2 - Engineering support	MIPR	Various:	0.000	2.874	Mar 2012	2.290	Mar 2013	0.835	Mar 2014	-		0.835	Continuing	Continuing	0.000
** SSA - ES S - Engineering Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.000		0.000		0.100	Mar 2014	-		0.100	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	2.874		3.284		1.407		0.000		1.407			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - OTHT SB - JEM Increment 2 - govt developmental testing	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center:Dahlgren, VA	0.000	0.000		1.626	Mar 2013	0.646	Mar 2014	-		0.646	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JWARN - OTHT SB - JWARN Increment 2 - govt developmental testing	MIPR	Various:	0.000	0.890	Mar 2012	0.598	Mar 2013	2.097	Mar 2014	-		2.097	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.890		2.224		2.743		0.000		2.743			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - PM/MS S - JEM Increment 2 - Program management	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		1.341	Mar 2013	0.307	Mar 2014	-		0.307	Continuing	Continuing	0.000
** JWARN - PM/MS SB - JWARN Increment 2 - Program management	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	1.455	Dec 2011	1.074	Mar 2013	0.668	Mar 2014	-		0.668	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	1.455		2.415		0.975		0.000		0.975			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	5.219	13.831	8.199	0.000	8.199			0.000

**Remarks**



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 Incr. 2 - Information System Initial Capability Document																												
JWARN Incr. 2 - Baseline Preliminary Design Review (Software)																												
JWARN Incr. 2 - Baseline Requirements Definition Package (RDP) Build Decision (BD)																												
JWARN Incr. 2 - Baseline Requirements Definition Package (RDP) Development and Approval																												
JWARN Incr. 2 - Development Testing																												
JWARN Incr. 2 - Baseline Critical Design Review (Software)																												
JWARN Incr. 2 - Multi-Service Operational Test and Evaluation (MOT&E)/LOG Demo																												
JWARN Incr. 2 - Initial Multi-Service Operational Testing (MOT&E)																												
JWARN Incr. 2 - Full Operational Capability (C2 Host System Dependent)																												
** SSA - Sustain Common Components products, process and services																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM Incr. 2 - Technology Development	1	2012	2	2014
JEM Incr. 2 - Analysis of Alternatives	1	2012	1	2012
JEM Incr. 2 - Prototype Development & Test (Contractor)	1	2012	1	2014
JEM Incr. 2 - Information System Initial Capability Document (IS ICD)	1	2013	3	2013
JEM Incr. 2 - Requirements Definition Package (RDP) Development and Approval	3	2013	1	2017
JEM Incr. 2 - Prototype Development Test (Gov't)	4	2013	2	2014
JEM Incr. 2 - Baseline Requirements Definition Package (RDP) Build Decision (BD)	2	2014	2	2014
JEM Incr. 2 - C2 Integration Requirements Definition Package (RDP) Build Decision	4	2014	4	2014
JEM Incr. 2 - Analyst Support Requirements Definition Package (RDP) Build Decision (BD)	4	2015	4	2015
JEM Incr. 2 - Integrated Development Test & Operational Test	2	2014	2	2018
** JWARN Incr. 2 - Materiel Development Decision	2	2012	2	2012
JWARN Incr. 2 - Analysis of Alternatives (Sensor Connectivity Capability)	3	2012	3	2013
JWARN Incr. 2 - Milestone A Decision (Software)	2	2013	2	2013
JWARN Incr. 2 - Test and Evaluation Master Plan (Software)	2	2013	2	2015
JWARN Incr. 2 - Information System Initial Capability Document	2	2013	3	2014
JWARN Incr. 2 - Baseline Preliminary Design Review (Software)	2	2014	4	2014
JWARN Incr. 2 - Baseline Requirements Definition Package (RDP) Build Decision (BD)	2	2014	4	2014
JWARN Incr. 2 - Baseline Requirements Definition Package (RDP) Development and Approval	2	2014	3	2015
JWARN Incr. 2 - Development Testing	2	2014	3	2018
JWARN Incr. 2 - Baseline Critical Design Review (Software)	3	2014	1	2015
JWARN Incr. 2 - Multi-Service Operational Test and Evaluation (MOT&E)/LOG Demo	4	2015	4	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

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Events	Start		End	
	Quarter	Year	Quarter	Year
JWARN Incr. 2 - Initial Multi-Service Operational Testing (MOT&E)	4	2015	4	2016
JWARN Incr. 2 - Full Operational Capability (C2 Host System Dependent)	3	2018	4	2018
** SSA - Sustain Common Components products, process and services	1	2012	4	2018

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program										<b>DATE:</b> April 2013		
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<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO <sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	121.170	133.254	122.936	-	122.936	95.724	78.461	41.661	30.014	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

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

The Medical Countermeasures Advanced Development and Manufacturing (ADM) program (formerly called MCMI) was established to provide a dedicated, agile, flexible, and enduring capability to the Department of Defense (DoD) to support the development, licensure, and production of biological warfare Medical Countermeasures (MCMs). The ADM will provide an integrated infrastructure to support a medical countermeasures pipeline, and respond to Warfighter and National security needs. The ADM effort is being executed in two phases. Phase I is a two year base period to establish, commission, and validate facilities and equipment for two ADM suites using single use, disposable, modular, and multi-product technologies for medical countermeasures advanced development and manufacturing. Both suites must meet Biological Safety Level-3 (BSL-3) standards. Phase 2 consists of four (4) two-year options to support and maintain ADM capability in a state of readiness to support medical countermeasures development (under the 'Animal Rule' as applicable) and manufacturing and assist in training personnel in its use. Once commissioned, the ADM will support transition of enabling science and technology (S&T) and novel platform and expression systems for delivery of products by leveraging technological and regulatory science advancements.

The ADM current Good Laboratory Practices (cGLP) Bio-Safety Level (BSL)- 4 Test and Evaluation (T&E) capability will provide a capability to develop medical countermeasures in a safe environment. The mission of the BSL-4 T&E facility will be to provide a capability that is appropriately resourced with personnel and equipment to conduct test and evaluation on medical countermeasures that are being developed for biological agents that require BSL-4 containment. There is a national shortage of cGLP BSL-4 availability within the U.S. This capability will be Government provided within a current Government owned and operated facility. The intent of this facility is to compliment the ADM T&E capability at the BSL-4 level.

Biosurveillance (BSV) requirements address medical and physical CBRN mission needs spanned in over 11 requirements documents, and through Combatant Commander (COCOM) identified needs. Funds will support Joint 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. 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. Depending on the maturity, outputs will focus on proving component, CONOPS, and subsystem transition into programs of record (PORs) and/or integration into existing PORs.



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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The Emerging Infectious Disease - Influenza (EID-Flu) Medical Countermeasure Acquisition Program is developing and will deliver an FDA-approved, broad-spectrum medical countermeasure to the Warfighter for protection against naturally occurring or biologically engineered influenza viruses. The emergence of a new pandemic strain with no existing effective vaccine or therapeutic is highly likely. The focus of the program is on a treatment option that is more effective than currently available drugs and has the potential to be an effective therapeutic not just for multiple strains of the flu, but many other biological warfare agents/viruses as well. Ongoing EID-Flu drug development will be leveraged to demonstrate additional broad-spectrum MCM's against naturally occurring and/or engineered biowarfare threats. Completion of activities required to enter Phase 3 clinical trials are the focus of the ACD&P phase. FDA approval for an influenza treatment is anticipated in FY16 following completion of the SDD phase.

The Hemorrhagic Fever Virus (HFV) Medical Countermeasure Acquisition Program develops platform-based medical countermeasures (MCMs), using high threat, extremely lethal Biological Warfare Agents (BWAs) of the Filoviridae family agents (Ebola and Marburg) as model systems. Platform-based 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, refinement and FDA qualification to support the pivotal animal efficacy testing required under the FDA 'Animal Rule'. Animal models will be developed and qualified for parenteral and aerosol indications. Aerosol models are needed to meet the Warfighter requirement to counter BWAs encountered on the battlefield or as a result of terrorist activities. 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 in FY18 following completion of the SDD phase.

The Next Generation Diagnostics System (NGDS) addresses the mission needs identified in the CBRN Field Analytics ICD (2010). The NGDS is envisioned to be 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 CBRN threat identification and FDA-cleared diagnostics to inform individual patient treatment and CBRN situational awareness and disease surveillance. NGDS Increment 1 Deployable Component will significantly improve diagnostic capabilities for deployable combat health support units (role 3) while also improving operational suitability and affordability. The NGDS Increment 1 Deployable Component is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. The NGDS Increment 1 Service Laboratory Component is intended to provide high throughput biological threat identification, characterization, and diagnostics to fixed site CONUS and OCONUS laboratories operated by the Army, Navy, and Air Force in coordination with the Armed Forces Health Surveillance Center. NGDS Increment 2 is intended to provide advanced diagnostics for biological pathogens and toxins, diagnostics for chemical and radiological exposures, and to provide capability to lower echelons of care.

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 Trivalent Filovirus Vaccine Program will offer protection against the threat of Ebola and Marburg viruses. The Trivalent Filovirus Vaccine Program was initiated in FY10 at Milestone A. The current budget supports development of two prototypes through the Technology Development Phase. The DoD anticipates that the Federal 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

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efficacy studies will be conducted to support 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.

The DoD plans to initiate a Ricin Vaccine Program in FY13. The current budget supports development of competitive prototypes through the Technology Development Phase. The efforts to be conducted during this period include developing a pilot scale manufacturing process and manufacture cGMP lots to support nonclinical and clinical studies; develop vaccine formulation that meets the logistical requirements of the DoD; conduct nonclinical GLP Safety studies and submit Investigational New Drug (IND) applications. 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). During this phase, the vaccine candidates will be evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). 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 Ricin Vaccine.

The DoD plans to initiate a Western, Eastern, and Venezuelan Equine Encephalitis vaccine (WEVEE) vaccine program in FY13. To satisfy the competitive prototyping requirement and to reduce program risk, the DoD will develop two prototypes through the Technology Development Phase. The efforts to be conducted during this period include develop pilot scale manufacturing processes and manufacture 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.

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) ADM - Bridging Studies</p> <p><b>FY 2012 Accomplishments:</b> Initiated studies and manufacturing to support single use, flexible and modular manufacturing technologies. These studies are needed to support the transition of medical countermeasure (MCM) manufacturing from stainless steel technology to single use system technologies. Conducting these studies will result in a shorter time to transition these MCMs into the ADM. Performed advanced process development activities for selected MCMs to be manufactured in the ADM. MCMs supported include a Ricin vaccine candidate (RVEc) and Filovirus virus like particle (VLP), Venezuelan equine encephalitis (VEE) virus replicon particles (VRP), Bioscavenger, and Alphavirus vaccine. Conducted building automation studies to analyze gaps between instrumentation and building and process automation systems (BAS/PAS). Characterized compatibility of Single Use Technology (SUT)/Single Use Instrumentation (SUI) with BAS/PAS. The automation studies reduce risk for the ADM, as they provide a state of automation for single use systems in an industrial manufacturing facility.</p> <p><b>FY 2013 Plans:</b></p>	10.155	12.764	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue studies and manufacturing to support single use, flexible and modular manufacturing technologies. Perform advanced process development activities for selected medical countermeasures to be manufactured in the ADM.				
<b>Title:</b> 2) ADM - Candidate Manufacturing Platform Processes		0.000	8.573	0.000
<b>FY 2013 Plans:</b> Continue good manufacturing practice (GMP) engineering and design studies to support Food and Drug Administration (FDA) regulatory sciences and/or manufacturing technology insertion (drug development, single use flexible manufacturing) into the ADM capability. Continue evaluation of candidate manufacturing platform processes to be transitioned to the ADM. Activities will support technology transfer and process optimization.				
<b>Title:</b> 3) ADM - Program Management and Contract Administration		6.118	3.948	0.000
<b>FY 2012 Accomplishments:</b> Provided oversight for the day-to-day program execution including guidance and direction, financial management and tracking, budget preparation, schedule planning and monitoring, and higher headquarters reporting requirements including but not limited to weekly highlight reports, monthly Acquisition Status Reports and quarterly program review briefs. Performed contract management and administration. Supported source selection activities.				
<b>FY 2013 Plans:</b> Maintain a Government Program Management Office that includes Government and contractor personnel with expertise in flexible, modular, single use system technologies. Identify, hire and retain Government personnel to oversee the MCM ADM. Initiate and maintain contract support to oversee the MCM ADM capability.				
<b>Title:</b> 4) ADM - BSL-4 GLP T&E		5.200	0.000	0.000
<b>FY 2012 Accomplishments:</b> Initiated a Bio-Safety Level BSL-4 Good Laboratory Practice (GLP) Test and Evaluation (T&E) capability to develop medical countermeasures in a safe environment. The BSL-4 GLP T&E capability will provide a capability that is appropriately resourced with personnel and equipment to conduct test and evaluation on medical countermeasures that are being developed for biological agents that require BSL-4 containment.				
<b>Title:</b> 5) ADM - Maintain BSL4 GLP T&E		0.000	0.000	5.899
<b>FY 2014 Plans:</b> Continue to maintain a Bio-Safety Level BSL-4 Test and Evaluation (T&E) capability to develop medical countermeasures in a safe environment.				
<b>Title:</b> 6) BSV		0.000	5.123	3.364
<b>FY 2013 Plans:</b>				

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiate Advanced Technology Demonstration (ATD) for Biosurveillance using the BSV Portal (BSP) as a baseline to address the development and integration of information sharing and communication systems.  <b>FY 2014 Plans:</b> Initiate test planning activities and logistics for the BSV Portal (BSP). Continue to refine system development and engineering efforts based on lessons learned from the BSV Portal baseline testing and field use.				
<b>Title:</b> 7) BSV  <b>FY 2013 Plans:</b> Initiate strategy for Biosurveillance concept of operations (CONOPs) development and requirement refinement in coordination with CBDP community. Initiate the transition of S&T surveillance systems and enhanced detection technologies into Advance Development.  <b>FY 2014 Plans:</b> Establish a test bed for possible tools and detection technologies. Further refine Biosurveillance CONOPs and requirements.		0.000	7.144	7.974
<b>Title:</b> 8) EID FLU  <b>FY 2012 Accomplishments:</b> Released a Request for Proposal (RFP) for the advanced development of a medical countermeasure against drug-resistant and emerging strains of influenza. Conducted full and open competition and awarded a cost-plus-fixed-fee contract to MediVector, Inc. of Boston, MA on 14 Mar 2012. Established an Earned Value Management System (EVMS) including a Program Management Baseline (PMB) and held an Integrated Baseline Review (IBR). Initiated preparations for Phase 3 clinical trials to be conducted in FY13-FY16.  <b>FY 2013 Plans:</b> Successful Milestone B decision was received in FY13, with approval to move into the SDD phase. Conduct clinical trials to include toxicity, bioequivalence, renal function, dosing and efficacy studies as required by the FDA to inform Phase 3 clinical trials and gain FDA approval. Leveraging broad-spectrum characteristics of this drug, we will evaluate efficacy against other naturally occurring and engineered biowarfare agents.		13.539	10.655	0.000
<b>Title:</b> 9) HFV  <b>FY 2012 Accomplishments:</b> Filed and gained IND status for a platform based MCM against the highly lethal Ebola Zaire Virus. Initiated Phase 1 Clinical trials for platform-based MCMs against the Ebola Zaire Virus and Marburg Virus. Demonstrated efficacy of each platform-based MCM against lethal doses of Ebola (2 MCMs) and Marburg (1 MCM) Viruses in non-human primates. Demonstrated the ability to scale up ten-fold the manufacturing capability of one platform-based MCM against Ebola. Submitted a qualification package for a non-		38.253	19.158	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
human primate model for aerosolized Ebola to the FDA. This is the first package of its kind submitted to the FDA Qualification of Product Development Tools process.  <b>FY 2013 Plans:</b> Complete Phase 1 Trials for platform-based MCMs against the Ebola Zaire Virus and Marburg Virus. Scale up manufacturing ten-fold to progress to commercial scale to support Initial Operating Capability (IOC). Continue the FDA qualification of the non-human primate model for aerosolized Ebola. Initiate and continue the FDA qualification of a Marburg Virus animal model. Transition from the ACD&P phase to the SDD phase in 3Q FY 13 at the successful conclusion of all Phase 1 Clinical Trial activities via a Milestone B Decision.				
<b>Title:</b> 10) IBP  <b>Description:</b> Intracellular Bacterial Pathogens (IBPs) - Upon Milestone A approval, the program will advance experimental broad-spectrum drug resistant candidates against naturally occurring and genetically engineered biowarfare/bacterial agents such as Anthrax and Burkholderia through the ACD&P phase. The program will initiate and complete Phase I clinical studies, where drug candidates are introduced into humans and early evidence is gathered on drug safety. The program will conclude the ACD&P phase by completing all activities associated with Phase 2 clinical studies where drug candidates are evaluated for efficacy. The results of the ACD&P phase clinical studies will support a Milestone B decision to continue toward a New Drug Application (NDA) and FDA approval/licensure.  <b>FY 2012 Accomplishments:</b> Provided support for program documentation and management efforts.		4.590	0.000	0.000
<b>Title:</b> 11) NGDS Increment 1  <b>FY 2012 Accomplishments:</b> Initiated and completed market research report, developed competitive prototyping test plans, acquired long lead test materials, established inter-Service and interagency working integrated product teams, and conducted source selection for contract award. Began diagnostic assay optimization of anthrax and viral hemorrhagic fever in vitro diagnostics.		3.886	0.000	0.000
<b>Title:</b> 12) NGDS Increment 1  <b>FY 2012 Accomplishments:</b> Initiated planning and execution of government testing, manufacturing readiness assessment, and Biological Warfare Agent (BWA) challenges in Bio Safety Level 3 (BSL-3) facility during the technology development phase.		3.300	0.000	0.000
<b>Title:</b> 13) NGDS Increment 1  <b>FY 2012 Accomplishments:</b>		5.600	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiated competitive prototyping candidate contract strategy and award. Initiated and continued operational assessment of 51 commercial prototype candidates, 17 each from three competitors at approx. \$43k per system. Initiate Government pre-clinical trial. Conduct assay optimization and complete pre-clinical trial.				
<b>Title:</b> 14) NGDS Increment 1 <b>FY 2014 Plans:</b> Initiate development of the Anthrax and Viral Hemorrhagic Fever in-vitro diagnostic (IVD) assays and clinical trials and prepare and submit FDA clearance 510(k) package. Initiate development of 14 environmental screening assays currently fielded on the Joint Biological Agent Identification and Diagnostic System and required to be on NGDS Inc 1 as the replacement to JBAIDS.		0.000	0.000	11.110
<b>Title:</b> 15) NGDS Increment 1 <b>FY 2014 Plans:</b> Conduct Multi Service Operational Test and Evaluation under DOT&E oversight for NGDS Inc 1 land-based diagnostic users. Initiate additional assay optimization.		0.000	0.000	7.200
<b>Title:</b> 16) NGDS Increment 2 <b>FY 2014 Plans:</b> Conduct MS A for NGDS Increment 2 and initiate technology development.		0.000	0.000	1.012
<b>Title:</b> 17) TMT/PLTFM <b>Description:</b> TMT/Platform Technologies: Biological Warning and Impact Projection Models (WIPM) Development, Biological Intelligence Database Upgrades and Technical Readiness Assessments (TRAs) in support of FY13 Biosurveillance initiatives. <b>FY 2012 Accomplishments:</b> Executed Biological Warning and Impact Projection Models (WIPM) Development, Biological Intelligence Database Upgrades and Technical Readiness Assessments (TRAs) in support of FY13 Biosurveillance initiatives. The WIPM initiative addressed the breadth of the biosurveillance operating environment and delivered capabilities building on predictive models (pre-event), projection/forecast models (post-event) and situational awareness tools. The Biological Intelligence Database Upgrade updated the existing biological databases to include the most up-to-date intelligence data. The TRAs included: 1. Biological Sample Collection, Preparation and Preservation Assessment; 2. Biological Hardware Assessment (Handheld Devices, Mobile Devices and Genomic Sequencing Devices); 3. Data Management and Fusion Assessment; and 4. Warning and Impact Projection Models (WIPM) Concept of Operation Development. These initiatives are continued under Biosurveillance (BSV).		14.255	0.000	0.000
<b>Title:</b> 18) VAC FILO <b>FY 2012 Accomplishments:</b>		7.374	14.347	17.817

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	
Continued non-clinical efficacy studies. Continued procedures for safeguarding biological select agents and toxins. <b>FY 2013 Plans:</b> Continue non-clinical efficacy studies and initiate non-clinical safety studies. <b>FY 2014 Plans:</b> Complete non-clinical efficacy studies and non-clinical safety studies.				
<b>Title:</b> 19) VAC FILO <b>FY 2012 Accomplishments:</b> Continued small-scale manufacturing process development for 2 prototypes. <b>FY 2013 Plans:</b> Continue small-scale manufacturing process development for 2 prototypes. Initiate cGMP Pilot Scale Production for 1 prototype. <b>FY 2014 Plans:</b> Complete small-scale manufacturing process development. Continue cGMP Pilot Scale Production.	5.579	8.699	5.964	
<b>Title:</b> 20) VAC FILO <b>FY 2013 Plans:</b> Initiate assay development and qualification for 2 prototypes. <b>FY 2014 Plans:</b> Continue assay development and qualification for 2 prototypes.	0.000	6.984	6.854	
<b>Title:</b> 21) VAC FILO <b>FY 2013 Plans:</b> Initiate final drug product formulation for 2 prototypes. <b>FY 2014 Plans:</b> Continue final drug product formulation for 2 prototypes.	0.000	2.200	3.004	
<b>Title:</b> 22) VAC FILO <b>FY 2012 Accomplishments:</b> Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2013 Plans:</b>	1.550	5.245	5.098	

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2014 Plans:</b> Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.				
<b>Title:</b> 23) VAC FILO <b>FY 2012 Accomplishments:</b> Planned and prepared for pre-Investigational New Drug (IND) application meeting with FDA for two vaccine prototypes. <b>FY 2013 Plans:</b> Continue preparation for pre-IND meeting with FDA for two vaccine prototypes. Conduct quality audits of manufacturing facilities. <b>FY 2014 Plans:</b> Conduct two pre-IND meetings with FDA. Initiate the preparation of Chemistry Manufacturing & Controls (CMC) section for IND submission. Conduct quality audit of clinical sites.		1.771	4.500	5.923
<b>Title:</b> 24) VAC RIC <b>FY 2013 Plans:</b> Conduct Milestone A. Initiate manufacturing process development. <b>FY 2014 Plans:</b> Continue manufacturing process development.		0.000	7.500	5.000
<b>Title:</b> 25) VAC RIC <b>FY 2013 Plans:</b> Initiate non-clinical safety and efficacy studies. <b>FY 2014 Plans:</b> Continue non-clinical safety and efficacy studies.		0.000	6.032	8.594
<b>Title:</b> 26) VAC RIC <b>FY 2013 Plans:</b> Initiate manufacturing and non-clinical assay development. <b>FY 2014 Plans:</b>		0.000	1.500	2.000



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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete assay development and test samples.				
<b>Title:</b> 27) VAC RIC <b>FY 2013 Plans:</b> Initiate providing strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2014 Plans:</b> Continue to provide strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.		0.000	1.000	3.100
<b>Title:</b> 28) VAC WEVEE <b>FY 2013 Plans:</b> Conduct Milestone A. Initiate non-clinical efficacy studies. <b>FY 2014 Plans:</b> Continue non-clinical efficacy studies.		0.000	2.966	8.164
<b>Title:</b> 29) VAC WEVEE <b>FY 2013 Plans:</b> Initiate small-scale manufacturing process development. <b>FY 2014 Plans:</b> Continue small-scale manufacturing process development.		0.000	2.790	8.730
<b>Title:</b> 30) VAC WEVEE <b>FY 2013 Plans:</b> Initiate non-clinical and manufacturing assay development. <b>FY 2014 Plans:</b> Complete non-clinical and manufacturing assay development.		0.000	1.126	4.129
<b>Title:</b> 31) VAC WEVEE <b>FY 2013 Plans:</b> Initiate strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2014 Plans:</b>		0.000	1.000	2.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.			
<b>Accomplishments/Planned Programs Subtotals</b>	121.170	133.254	122.936

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	197.907	212.056	263.443		263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	Continuing	Continuing
• JM2222: <i>BIOSCAVENGER (BSCAV)</i>	0.000	0.000	0.000		0.000	0.000	0.000	0.000	24.828	Continuing	Continuing
• JM5597: <i>HEMORRHAGIC FEVER VIRUS (HFV)</i>	0.000	0.000	0.000		0.000	0.000	0.000	0.000	2.725	Continuing	Continuing
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	0.000	4.466	8.951		8.951	2.500	0.000	0.000	0.000	0.000	15.917
• JM8788: <i>NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)</i>	2.380	26.934	3.311		3.311	10.682	10.391	5.154	4.080	0.000	62.932
• JX0005: <i>DOD BIOLOGICAL VACCINE PROCUREMENT</i>	0.180	0.185	0.185		0.185	6.991	25.058	41.716	39.410	Continuing	Continuing
• JX0210: <i>CRITICAL REAGENTS PROGRAM (CRP)</i>	0.998	1.012	0.000		0.000	0.000	0.000	0.000	0.000	0.000	2.010
• JX0300: <i>BIOSURVEILLANCE (BSV)</i>	0.000	0.000	1.000		1.000	3.000	2.000	1.000	7.000	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

ADM

The ADM Capability will use a FAR based ten (10) year [two (2) year base with four (4) two (2) year options] Cost Plus Fixed fee (CPFF) contract - Full and Open competition with best value to the government. A Request for Proposal (RFP) was released in August 2011; final source selection delayed due to a pre-contract award

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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protest filed with the U.S. Government Accountability Office in June 2012. Contract award is now planned for 2QFY13. The establishment of the CMO component of the ADM will occur within the base period while the other core service components (CRO, T&E, F&F) will be available shortly after the contract award. The CMO will utilize modular and disposable/single use equipment to allow for flexibility in manufacturing various MCM products within the same facility. The contractor will complete facility commissioning, support independent validation, and attain Current Good Manufacturing Practice (cGMP) and Current Good Laboratory Practice (cGLP) status within 24 months following contract award and provide expertise necessary to maintain the facility in readiness to support the development and manufacture of MCMs, and conduct training. The DoD will continue to issue future separate contracts for specific MCM products - i.e. the MCM pipeline .

**BSV**

Objective is the delivery of a set of capabilities to 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 from the Biosurveillance Advanced Technology Demonstration (ATD). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's). Through evaluation and maturation of hardware/software tools and devices from the Biosurveillance ATD, this project office will emphasize opportunities from common component technology and modularity. After the Materiel Development Decision, AoAs, and Milestone A, a Request for Proposal will be released selecting the best value for the government for development of the CBRN Biosurveillance capability. Operational testing of competitive prototypes in the relevant environment will be conducted following MS B. After Milestone C, during the Production and Deployment phase, the system will achieve operational capability that satisfies mission needs; conduct a Low-Rate Production Decision Review and a Full Rate Production Decision Review, leading to Full-Rate production and deployment.

**EID FLU**

EID-Flu MCM program is utilizing a single step acquisition approach to reach FDA Approval. A single step approach, which is the acquisition of a defined capability in one increment, is necessary for this acquisition as a result of the FDA regulatory process and maturity of the product. To accelerate drug development and reduce risk to the program, the MCM entered the program with active IND-status. It is the intent of the EID-Flu program to utilize the MCM Advanced Development and Manufacturing (ADM) capabilities. If the FDA mandates post-marketing surveillance studies, they will be conducted during Production and Deployment. In addition, the current contractor has the capability to manufacture the quantities currently required for DoD use should the need arise.

**HFV**

The acquisition strategy uses a parallel evaluation of drug candidates against the lethal Ebola Zaire and Marburg viruses to achieve competitive prototyping in the ACD&P phase. 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(s) will submit a New Drug Application(s) for the Ebola Zaire and Marburg therapeutics 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. The DoD Acquisition strategy for the HFV program has been uniquely tailored to a MCM class approach designed to provide a more efficient mechanism for pursuing additional MCM candidates as required.

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<p>NGDS</p> <p>The Next Generation Diagnostics System (NGDS) will develop and field an enhanced CBRN analytical and diagnostic system to the Joint force through an evolutionary acquisition strategy. NGDS Increment 1 Deployable Component will follow a developmental acquisition strategy to field Biological Warfare Agent diagnostic analytical devices. Additional DoD-unique BWA diagnostic and environmental surveillance capabilities will be added to the downselected platform capabilities. BA4 funds were used to conduct competitive prototyping and early operational assessments on the commercial hardware diagnostic systems immediately following MS A to support downselect to the final NGDS Increment 1 system.</p> <p>VAC FILO</p> <p>The Government will develop two Filovirus vaccine candidates through a Phase 1 clinical trial. 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 System Development and Demonstration (SDD) 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, Medical Countermeasure Initiative (MCMI) Advanced Development Manufacturing, and the MCMI Test &amp; Evaluation Facility. This Department of Defense 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>VAC RIC</p> <p>The technology development stage includes the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine is evaluated for safety and immunogenicity in a small human trial (Phase 1). During the System Development and Demonstration phase (SDD), the product sponsor will stabilize the vaccine formulation, validate the manufacturing processes and testing protocols, optimize the delivery systems and manufacture consistency lots. Phase 2 clinical trials are performed during this phase to provide additional safety data and determine dose ranging and scheduling. Phase 3 human safety trials are initiated and Animal Rule studies conducted to demonstrate efficacy against battlefield challenge. At the Milestone C, approval is granted to produce the Initial Operational Capability (IOC) of vaccine material. A Biologics Licensure Application is 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.</p> <p><b>E. Performance Metrics</b> N/A</p>		

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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - HW SB - Bridging Study - Filovirus VRP	C/FFP	BioFactura Inc.:Rockville, MD	0.000	1.778	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - Studies & Engineering to Support Early Stage Clinical Trials	Various	TBD:	0.000	0.000		12.764	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW SB - Bridging Study - Filovirus Animal Modeling	C/FFP	Texas BioMedical Research Institute:San Antonio, TX	0.000	2.399	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW SB - Bridging Study - Prophylactic Bioscavengers	C/FFP	Oligasis LLC:Palo Alto, CA	0.000	2.364	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW SB - Bridging Study - ADM Equipment & Process Flow	C/FFP	DME Alliance Inc.:Allentown, PA	0.000	2.459	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW SB - Bridging Study - VLP Production Platform Optimization	MIPR	National Institute of Allergy & Infectious Diseases:Bethesda, MD	0.000	1.105	Jul 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW SB - Bridging Study - Ricin IP Search	MIPR	US Army Medical Research Material Command (USAMRMC):Fort Detrick, MD	0.000	0.050	Apr 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - Engineering & Design Studies	Various	TBD:	0.000	0.000		8.573	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** BSV - SW SB - BSV Portal SW Design & Integration	Various	TBD:	0.000	0.000		2.506	Mar 2013	0.991	Mar 2014	-		0.991	Continuing	Continuing	0.000
HW C - BSV Portal Hardware Component	Various	TBD:	0.000	0.000		0.000		0.058	Mar 2014	-		0.058	Continuing	Continuing	0.000
SW SB - SW Design & Integration	Various	TBD:	0.000	0.000		1.035	Mar 2013	1.035	Mar 2014	-		1.035	Continuing	Continuing	0.000

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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HW SB - HW Component Design	Various	TBD:	0.000	0.000		1.840	Mar 2013	2.070	Mar 2014	-		2.070	Continuing	Continuing	0.000
** EID FLU - SW SB - EID-Flu Advanced Development Contract	C/CPFF	MediVector Inc.:Boston, MA	0.000	8.878	Mar 2012	8.710	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** HFV - SW SB - Conduct Phase I Clinical Trials	C/CPIF	Tekmira Pharmaceuticals Corp.:Vancouver British Columbia, CN	0.000	4.600	Jun 2012	4.000	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
SW SB - Animal Models	Allot	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	4.222	Mar 2012	2.394	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
SW SB - Conduct Phase I Clinical Trials	C/CPIF	Serepta:Bothell, WA	0.000	23.654	Apr 2012	8.500	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NGDS - HW C - Network Integration	MIPR	JPM Information Systems (JPM IS):San Diego, CA	0.000	0.000		0.000		2.372	Mar 2014	-		2.372	Continuing	Continuing	0.000
HW C - Begin diagnostic assay optimization for Plague and Tularemia IVD	Allot	TBD:	0.000	0.000		0.000		1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
HW C - Begin development of 14 agent environmental BWA Screening assay panels	Allot	TBD:	0.000	0.000		0.000		5.000	Mar 2014	-		5.000	Continuing	Continuing	0.000
HW C - Complete development of Anthrax and Viral Hemorrhagic Fever IVD, clinical trials, prepare FDA submission	Allot	TBD:	0.000	0.000		0.000		5.000	Mar 2014	-		5.000	Continuing	Continuing	0.000
HW C - Procure 51 test systems for clinical trials	Various	Various:	0.000	2.200	Mar 2013	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** PLTFM - SW SB - Platform Technology - Bioinformatics	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	3.900	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW S - Predictive Systems	MIPR	JPM Information Systems (JPM IS):San Diego, CA	0.000	2.500	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW SB - Response Systems TRE	MIPR	Various:	0.000	2.025	Jul 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW S - WIPM	MIPR	Various:	0.000	1.400	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW GFPR - Response Systems TRE	MIPR	National Assessment Group:Kirkland, NM	0.000	0.467	Dec 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW SB - Response Systems Intel Data Base	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	0.000	1.429	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
SW SB - Response Systems	MIPR	Lawrence Livermore:Livermore, CA	0.000	0.611	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** VAC FILO - HW S - Non Clinical Studies	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	2.000	Mar 2012	2.775	Dec 2012	2.290	Dec 2013	-		2.290	Continuing	Continuing	0.000
HW S - Manufacturing Process Development Prototype 1	C/CPIF	Paragon Bioservices Inc.:Baltimore, MD	0.000	3.711	Dec 2011	7.154	Mar 2013	1.500	Dec 2013	-		1.500	Continuing	Continuing	0.000
HW S - Manufacturing cGMP Pilot Prototype 1	C/FPIF	Paragon Bioservices Inc.:Baltimore, MD	0.000	0.000		5.546	Dec 2012	4.500	Dec 2013	-		4.500	Continuing	Continuing	0.000
HW S - Formulation Development Prototype 1	C/FPIF	Paragon Bioservices Inc.:Baltimore, MD	0.000	0.000		1.513	Dec 2012	1.000	Dec 2013	-		1.000	Continuing	Continuing	0.000
HW S - Manufacturing cGMP Pilot Prototype 2	C/FPIF	TBD:	0.000	0.000		0.000		1.010	Dec 2013	-		1.010	Continuing	Continuing	0.000

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<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
HW S - Manufacturing Formulation Development Prototype 2	C/FPIF	TBD:	0.000	0.000		0.000		1.015	Mar 2014	-		1.015	Continuing	Continuing	0.000
HW S - Manufacturing Process Development Prototype 2	C/CPIF	TBD:	0.000	0.000		0.500	Jun 2013	6.019	Mar 2014	-		6.019	Continuing	Continuing	0.000
** VAC RIC - HW S - Manufacturing and Process Development	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		5.240	Mar 2013	4.000	Mar 2014	-		4.000	Continuing	Continuing	0.000
** VAC WEVEE - HW S - Manufacturing and Process Development	C/CPIF	TBD:	0.000	0.000		3.079	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Manufacturing and Process Development	C/CPIF	TBD:	0.000	0.000		0.000		8.545	Jun 2014	-		8.545	Continuing	Continuing	0.000
HW S - Non-Clinical Studies	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		1.097	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Non-Clinical Studies #2	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		0.000		6.239	Mar 2014	-		6.239	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	71.752		77.226		53.644		0.000		53.644			0.000

<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
** BSV - ILS S - BSV Portal ILS & Systems Engr	Various	TBD:	0.000	0.000		0.462	Mar 2013	0.162	Mar 2014	-		0.162	Continuing	Continuing	0.000



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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ILS SB - Transition of tools ILS & Systems Engr	Various	TBD:	0.000	0.000		0.642	Mar 2013	0.620	Mar 2014	-		0.620	Continuing	Continuing	0.000
ILS SB - Transition of detection devices ILS & Systems Engr	Various	TBD:	0.000	0.000		0.656	Mar 2013	0.625	Mar 2014	-		0.625	Continuing	Continuing	0.000
** NGDS - TD/D SB - Test Preparation and Support	MIPR	Battelle Memorial Institute:Aberdeen, MD	0.000	3.250	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES C - Test and Training Preparation	MIPR	Various:	0.000	0.353	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES C - Challenge Materials	MIPR	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.836	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES C - Standard Sample Materials	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.082	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES C - Service TE WIPT Support	MIPR	Various:	0.000	0.795	Jun 2012	0.000		1.000	Feb 2014	-		1.000	Continuing	Continuing	0.000
** VAC FILO - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA):Fort Detrick, MD	0.000	0.000		4.028	Dec 2012	4.493	Dec 2013	-		4.493	Continuing	Continuing	0.000
ES S - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	MIPR	US Army Medical Materiel Development Activity (USAMMDA):Fort Detrick, MD	0.000	0.250	Mar 2012	2.805	Dec 2012	2.945	Dec 2013	-		2.945	Continuing	Continuing	0.000
** VAC RIC - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity	0.000	0.000		0.917	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000

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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		(USAMMDA):Fort Detrick, MD													
ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA):Fort Detrick, MD	0.000	0.000		0.000		1.105	Mar 2014	-		1.105	Continuing	Continuing	0.000
** VAC WEVEE - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA):Fort Detrick, MD	0.000	0.000		0.000		0.500	Mar 2014	-		0.500	Continuing	Continuing	0.000
ES S - Regulatory Integration #2	MIPR	US Army Medical Materiel Development Activity (USAMMDA):Fort Detrick, MD	0.000	0.000		0.950	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	5.566		10.460		11.450		0.000		11.450			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - DTE SB - BSL - 4 GLP T&E	Allot	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	5.200	Oct 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** BSL4 GLP T&E - DTE SB - T&E Facility	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		0.000		5.899	Dec 2013	-		5.899	Continuing	Continuing	0.000

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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** BSV - DTE S - BSV Portal Development Testing	Various	TBD:	0.000	0.000		0.104	Mar 2013	0.052	Mar 2014	-		0.052	Continuing	Continuing	0.000
OTE S - BSV Portal Technology demonstration	Various	TBD:	0.000	0.000		0.265	Mar 2013	0.276	Mar 2014	-		0.276	Continuing	Continuing	0.000
DTE SB - Detection Devices Developmental Testing	Various	TBD:	0.000	0.000		0.863	Mar 2013	0.813	Mar 2014	-		0.813	Continuing	Continuing	0.000
OTE SB - Detection Devices User Assessment	Various	TBD:	0.000	0.000		0.000		0.690	Mar 2014	-		0.690	Continuing	Continuing	0.000
** NGDS - OTHS SB - MIL-STD 810 and MIL-STD 461 Testing	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.420	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE C - Conduct Operational Testing under DOT&E oversight	MIPR	TBD:	0.000	0.000		0.000		1.000	Feb 2014	-		1.000	Continuing	Continuing	0.000
DTE C - Procure 13 systems for testing	MIPR	TBD:	0.000	0.000		0.000		1.000	Feb 2014	-		1.000	Continuing	Continuing	0.000
OTHT SB - Conduct Increment 1 Competitive Prototyping DT Testing	MIPR	Various:	0.000	3.400	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** VAC FILO - OTHS SB - Testing, Evaluation, and Clinical Trials	MIPR	Battelle Memorial Institute:Columbus, OH	0.000	7.586	Mar 2012	8.608	Mar 2013	9.014	Mar 2014	-		9.014	Continuing	Continuing	0.000
OTE C - Assay Development Prototype 1	C/CPIF	Paragon Bioservices Inc.:Baltimore, MD	0.000	0.000		2.792	Dec 2012	2.500	Dec 2013	-		2.500	Continuing	Continuing	0.000
DTE C - Manufacturing Pilot Scale Prototype 1	C/CPIF	Paragon Bioservices Inc.:Baltimore, MD	0.000	0.000		1.290	Dec 2012	1.045	Dec 2013	-		1.045	Continuing	Continuing	0.000
OTE C - Assay Development Prototype 2	C/CPIF	TBD:	0.000	0.000		0.200	Jun 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DTE C - Manufacturing Pilot Scale Prototype 2	C/CPIF	TBD:	0.000	0.000		0.000		1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
** VAC RIC - DTE C - Test and Evaluation Animal Model	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		3.000	Mar 2013	4.214	Mar 2014	-		4.214	Continuing	Continuing	0.000
DTE C - Assay Development	MIPR	Battelle Memorial Institute:Columbus, OH	0.000	0.000		3.500	Mar 2013	7.000	Mar 2014	-		7.000	Continuing	Continuing	0.000
** VAC WEVEE - OTE C - Test and Evaluation Assay Development	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		0.000		6.434	Mar 2014	-		6.434	Continuing	Continuing	0.000
OTE C - Test and Evaluation Assay Development	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		2.393	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	16.606		23.015		41.937		0.000		41.937			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - PM/MS S - Program Management	MIPR	Various:	0.000	5.070	Mar 2012	3.948	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Program Support	C/CPFF	Gryphon Technologies:Greenbelt, MD	0.000	0.389	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Program Support #2	C/CPFF	Noblis Inc.:Falls Church, VA	0.000	0.659	Jul 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** BSV - PM/MS S - Management Support	Allot	Various:	0.000	0.000		3.894	Mar 2013	3.946	Mar 2014	-		3.946	Continuing	Continuing	0.000
** EID FLU - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	4.661	Mar 2012	1.945	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** HFV - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	5.777	Mar 2012	2.843	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
PM/MS SB - A&AS CONTRACT	C/FFP	Kalman & Company Inc.:Virginia Beach, VA	0.000	0.000		1.421	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** IBP - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	1.211	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS SB - JPM-TMT	C/FFP	Kalman & Company Inc.:Virginia Beach, VA	0.000	3.244	May 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS SB - Management Support	Allot	Various:	0.000	0.135	Aug 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** NGDS - PM/MS SB - Product Management Systems Support	Various	Various:	0.000	1.450	Mar 2012	0.000		2.950	Feb 2014	-		2.950	Continuing	Continuing	0.000
** PLTFM - PM/MS SB - BSV - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	1.240	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS SB - JPM-TMT Management Support	Allot	JPM Transformational Medical Technologies (JPM	0.000	0.683	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		TMT):Fort Belvoir, VA													
** VAC FILO - PM/MS S - Contractor Support	C/FFP	TBD:	0.000	0.000		0.595	Jun 2013	0.605	Jun 2014	-		0.605	Continuing	Continuing	0.000
PM/MS S - Program Manager Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.763	Dec 2012	0.817	Dec 2013	-		0.817	Continuing	Continuing	0.000
PM/MS S - Program Management/Program Manager Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		1.305	Mar 2013	1.400	Mar 2014	-		1.400	Continuing	Continuing	0.000
PM/MS S - JVAP Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.563	Dec 2012	0.707	Dec 2013	-		0.707	Continuing	Continuing	0.000
PM/MS S - Contractor Systems Engineering/ Program Management Support	SS/FFP	Goldbelt Raven LLC.:Frederick, MD	0.000	1.000	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS - Joint Vaccine Acquisition Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	1.727	Mar 2012	0.838	Mar 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
PM/MS SB - PM/MS S - Contractor Systems Engineering/Program Management Support	C/FP	TBD:	0.000	0.000		0.700	Mar 2013	0.800	Mar 2014	-		0.800	Continuing	Continuing	0.000
** VAC RIC - PM/MS S - Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		1.000	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Contractor Systems Program Management Support	C/FP	TBD:	0.000	0.000		0.687	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM/MS S - Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		1.000	Dec 2012	1.000	Dec 2013	-		1.000	Continuing	Continuing	0.000
PM/MS S - Contractor Systems Program Management Support #2	C/FP	TBD:	0.000	0.000		0.000		0.687	Jun 2014	-		0.687	Continuing	Continuing	0.000
PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.000		0.688	Dec 2013	-		0.688	Continuing	Continuing	0.000
PM/MS S - Joint Vaccine Acquisition Program Management #2	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.688	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
** VAC WEVEE - PM/MS S - Program Manger Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.000		0.533	Dec 2013	-		0.533	Continuing	Continuing	0.000
PM/MS S - Contractor Systems Engineering Program Support	C/FFP	TBD:	0.000	0.000		0.000		0.317	Jun 2014	-		0.317	Continuing	Continuing	0.000
PM/MS S - Joint Vaccine Acquisition Program Management #3	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.000		0.455	Dec 2013	-		0.455	Continuing	Continuing	0.000
PM/MS S - Joint Vaccine Acquisition Program Management #4	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.363	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	27.246		22.553		15.905		0.000		15.905			0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	121.170	133.254	122.936	0.000	122.936			0.000

Remarks



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Bridging Studies																												
ADM - Technology Transfer and Process Optimization																												
ADM - Engineering & Design Studies																												
ADM - Contract Award																												
ADM - Support Early Clinical Trials																												
** BSV - AoA																												
BSV - ATD																												
BSV - ATD MDD																												
BSV - MS B - ATD BSP																												
BSV - MS C - ATD BSP																												
** EID FLU - Conduct toxicity, bioequivalence, and renal function studies to support FDA approval																												
EID FLU - Milestone B Decision																												
** HFV - Phase 1 Clinical Trials for HFV MCMs																												
HFV - Milestone B Decision																												
** NGDS - Increment 1 MS A																												
NGDS - Conduct market research, CP planning and Source Selection																												
NGDS - Conduct government testing																												
NGDS - Increment 1 Competitive Prototyping Phase																												
NGDS - Anthrax/Viral Hemorrhagic Fever Assay optimization																												
NGDS - Anthrax/VHF clinical trials																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
NGDS - Increment 1 Development and FDA approval of Anthrax/VHF assays																												
NGDS - Increment 1 Tularemia and Plague IVD assay development																												
NGDS - FOC																												
NGDS - IOC																												
NGDS - Increment 1 MS C																												
** IBP - AoA																												
IBP - MS A																												
** VAC FILO - Non-clinical studies																												
VAC FILO - Manufacturing process development																												
VAC FILO - Planned for Pre-IND application meeting																												
VAC FILO - Pre-IND meetings with FDA (2 prototypes)																												
VAC FILO - Implementation of Phase 1 Clinical Trials (2 prototypes)																												
VAC FILO - IND Submissions (2 prototypes)																												
VAC FILO - Phase 1 Clinical Trials (2 prototypes)																												
VAC FILO - Milestone B																												
** VAC RIC - Milestone A																												
VAC RIC - Assay Development																												
VAC RIC - Non-Clinical Efficacy Studies																												
VAC RIC - Manufacturing Process Development and Pilot Lots																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 RIC - Pre-IND																												
VAC RIC - IND Submission																												
VAC RIC - Phase 1 Clinical Trials (competitive prototypes)																												
VAC RIC - Milestone B																												
** VAC WEVEE - Milestone A																												
VAC WEVEE - Non-Clinical Studies																												
VAC WEVEE - Assay Development																												
VAC WEVEE - Manufacturing Process Development and Pilot Lots																												
VAC WEVEE - Pre-IND																												
VAC WEVEE - Phase 1 Clinical Trials																												
VAC WEVEE - IND Submission																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** ADM - Bridging Studies	3	2012	4	2013
ADM - Technology Transfer and Process Optimization	3	2012	3	2014
ADM - Engineering & Design Studies	2	2013	2	2014
ADM - Contract Award	2	2013	2	2013
ADM - Support Early Clinical Trials	3	2013	1	2015
** BSV - AoA	2	2013	4	2013
BSV - ATD	3	2013	3	2015
BSV - ATD MDD	3	2015	3	2015
BSV - MS B - ATD BSP	2	2016	2	2016
BSV - MS C - ATD BSP	3	2017	3	2017
** EID FLU - Conduct toxicity, bioequivalence, and renal function studies to support FDA approval	4	2012	2	2016
EID FLU - Milestone B Decision	1	2013	1	2013
** HFV - Phase 1 Clinical Trials for HFV MCMs	1	2012	1	2014
HFV - Milestone B Decision	2	2014	2	2014
** NGDS - Increment 1 MS A	2	2012	2	2012
NGDS - Conduct market research, CP planning and Source Selection	2	2012	1	2013
NGDS - Conduct government testing	4	2012	2	2013
NGDS - Increment 1 Competitive Prototyping Phase	1	2013	3	2013
NGDS - Anthrax/Viral Hemorrhagic Fever Assay optimization	1	2013	2	2013
NGDS - Anthrax/VHF clinical trials	4	2013	1	2015
NGDS - Increment 1 Development and FDA approval of Anthrax/VHF assays	3	2013	2	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NGDS - Increment 1 Tularemia and Plague IVD assay development	2	2015	1	2016
NGDS - FOC	4	2018	4	2018
NGDS - IOC	1	2017	1	2017
NGDS - Increment 1 MS C	3	2015	3	2015
** IBP - AoA	1	2012	1	2012
IBP - MS A	2	2014	2	2014
** VAC FILO - Non-clinical studies	1	2012	4	2014
VAC FILO - Manufacturing process development	1	2012	4	2014
VAC FILO - Planned for Pre-IND application meeting	3	2013	3	2013
VAC FILO - Pre-IND meetings with FDA (2 prototypes)	3	2014	3	2014
VAC FILO - Implementation of Phase 1 Clinical Trials (2 prototypes)	3	2015	1	2016
VAC FILO - IND Submissions (2 prototypes)	2	2016	3	2016
VAC FILO - Phase 1 Clinical Trials (2 prototypes)	3	2016	3	2017
VAC FILO - Milestone B	1	2017	1	2017
** VAC RIC - Milestone A	2	2013	2	2013
VAC RIC - Assay Development	2	2013	2	2014
VAC RIC - Non-Clinical Efficacy Studies	2	2013	4	2016
VAC RIC - Manufacturing Process Development and Pilot Lots	2	2013	3	2015
VAC RIC - Pre-IND	3	2014	1	2015
VAC RIC - IND Submission	1	2015	1	2015
VAC RIC - Phase 1 Clinical Trials (competitive prototypes)	2	2015	3	2017
VAC RIC - Milestone B	4	2016	4	2016
** VAC WEVEE - Milestone A	2	2013	2	2013
VAC WEVEE - Non-Clinical Studies	2	2013	1	2017
VAC WEVEE - Assay Development	2	2013	1	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
VAC WEVEE - Manufacturing Process Development and Pilot Lots	2	2013	2	2016
VAC WEVEE - Pre-IND	2	2015	2	2015
VAC WEVEE - Phase 1 Clinical Trials	1	2016	1	2018
VAC WEVEE - IND Submission	3	2016	3	2016

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	-	7.697	0.000	2.000	-	2.000	3.705	5.114	10.920	24.186	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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: (1) Bioscavenger, a new capability, to be used as a prophylaxis against nerve agents; (2) 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) 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) BSCAV	2.000	0.000	0.000
<b>FY 2012 Accomplishments:</b> Initiated source selection activities for SDD contract award and initiated re-establishment of a manufacturing line (NTA).			
<b>Title:</b> 2) BSCAV	0.926	0.000	0.000
<b>FY 2012 Accomplishments:</b> Continued studies for alternative manufacturing technologies (NTA).			
<b>Title:</b> 3) INATS	2.953	0.000	0.000
<b>FY 2012 Accomplishments:</b> Continued and completed Phase 1 Clinical Trial.			
<b>Title:</b> 4) INATS	1.247	0.000	1.165

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<b><i>FY 2012 Accomplishments:</i></b> Continued non-clinical toxicology and NTA efficacy studies.			
<b><i>FY 2014 Plans:</i></b> Complete non-clinical toxicology and NTA efficacy studies.			
<b><i>Title:</i></b> 5) INATS	0.571	0.000	0.835
<b><i>FY 2012 Accomplishments:</i></b> Continued enhanced formulation stability studies and process optimization efforts.			
<b><i>FY 2014 Plans:</i></b> Complete enhanced formulation stability studies and process optimization efforts and conduct MS B.			
<b>Accomplishments/Planned Programs Subtotals</b>	7.697	0.000	2.000

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	2.336	9.642	55.087		55.087	58.342	57.675	47.340	28.759	0.000	259.181
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	0.000	4.466	8.951		8.951	2.500	0.000	0.000	0.000	0.000	15.917

**Remarks**

**D. Acquisition Strategy**

BSCAV

The Bioscavenger acquisition strategy 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



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>	<b>PROJECT</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>

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.

**INATS**

During the Technology Development Phase, the INATS acquisition strategy has the Government serving as the system integrator directly overseeing completion of small-scale manufacturing, execution of nonclinical animal safety studies, submission of an Investigational New Drug (IND) application, and conduct of a Phase 1 clinical safety study. Following a successful Pre-EMD Review and Milestone B, the INATS program will continue to exercise management oversight in the System Development and Demonstration (SDD) Phase with system integration support from a commercial partner. Prior to FDA licensure, the commercial partner will perform a Phase 2 human clinical safety study toxicology and definitive animal efficacy studies for an improved oxime. The system integrator will also manufacture an improved formulation in an autoinjector delivery system. As part of a second line of effort, the INATS program will conduct nonclinical studies to obtain FDA approval for expand the indications for PB under task order vehicles. During the Production and Deployment Phase, the INATS program, in collaboration with the contracted system integrator, will pursue full rate and stockpile production as well as conduct any FDA-mandated post-marketing studies. After delivery of the Full Operational Capability quantities, the INATS program will transfer contracting and logistical responsibilities to the Defense Logistics Agency - Troop Support during the Operations and Support Phase.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** BSCAV - HW C - pBSCAV - Small Scale Manufacturing	C/CPFF	PharmAthene Inc.:Annapolis, MD	4.354	1.710	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			4.354	1.710		0.000		0.000		0.000		0.000			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** INATS - ES S - Regulatory Integration, IND, and NDA Support Efforts	MIPR	Battelle Memorial Institute:Columbus, OH	1.056	0.300	Mar 2012	0.000		0.145	Mar 2014	-		0.145	Continuing	Continuing	0.000
<b>Subtotal</b>			1.056	0.300		0.000		0.145		0.000		0.145			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** BSCAV - DTE S - Alternate Manufacturing Technology Studies	C/CPFF	PharmAthene Inc.:Annapolis, MD	0.000	0.850	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** INATS - DTE S - Conduct Formulation and Stability Studies	C/CPFF	Southwest Research Institute:San Antonio, TX	1.068	0.376	Mar 2012	0.000		0.720	Feb 2014	-		0.720	Continuing	Continuing	0.000
DTE C - Phase 1 Clinical Trial	MIPR	Battelle Memorial Institute:Columbus, OH	0.000	2.335	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - Toxicological and Efficacy Studies	MIPR	Battelle Memorial Institute:Columbus, OH	0.000	1.045	Mar 2012	0.000		0.990	Mar 2014	-		0.990	Continuing	Continuing	0.000
<b>Subtotal</b>			1.068	4.606		0.000		1.710		0.000		1.710			0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
** BSCAV - PM/MS C - Product Management Support	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.245	0.216	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS C - Chem Bio Medical Systems	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	2.487	0.150	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** INATS - PM/MS S - Product Management Support	SS/FFP	Goldbelt Raven LLC.:Frederick, MD	0.503	0.570	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Chem Bio Medical Systems	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.670	0.145	Mar 2012	0.000		0.145	Dec 2013	-		0.145	Continuing	Continuing	0.000
<b>Subtotal</b>			3.905	1.081		0.000		0.145		0.000		0.145			0.000
<b>Project Cost Totals</b>			10.383	7.697		0.000		2.000		0.000		2.000			0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				
	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	
** BSCAV - Alternate Manufacturing Studies																													
BSCAV - Pre SDD Review																													
BSCAV - Milestone B																													
** INATS - Phase 1 Clinical Safety Studies																													
INATS - Nonclinical Studies																													
INATS - Formulation / Stability Studies																													
INATS - Pre SDD Review																													
INATS - Milestone B																													

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** BSCAV - Alternate Manufacturing Studies	1	2012	4	2013
BSCAV - Pre SDD Review	1	2012	1	2012
BSCAV - Milestone B	4	2012	4	2012
** INATS - Phase 1 Clinical Safety Studies	1	2012	4	2012
INATS - Nonclinical Studies	1	2012	4	2014
INATS - Formulation / Stability Studies	1	2012	4	2014
INATS - Pre SDD Review	3	2013	3	2013
INATS - Milestone B	1	2014	1	2014

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	0.000	4.050	0.000	-	0.000	0.000	0.000	0.000	8.610	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

Operational forces have an immediate need to survive, safely operate, and sustain operations in a radiological/nuclear (R/N) threat environment across a continuum of global, contingency, special operations/low intensity conflict, homeland defense, and other high-risk missions.

Exposure to ionizing radiation causes acute radiation syndrome (ARS) which includes damage to blood-forming cells (hematopoietic system), gastrointestinal system, and central nervous system. Treatment of R/N casualties depends on effective use of multiple medical capabilities in an integrated manner. There are currently no FDA-approved prophylactic, therapeutic, or biodosimetry capabilities against ARS. Thus, this program supports the development of medical radiological countermeasures (MRADC) using a family-of-systems approach to provide a full spectrum medical capability including prophylactics, therapeutics, and biodosimetry to protect Warfighters against the radiation threat and to mitigate the medical consequences of exposure to ionizing radiation.

MRADC efforts include development of multiple countermeasures to prevent, limit, or reverse the myriad of injuries caused by exposure to radiation resulting in increased survival, decreased incapacity, and sustained operational effectiveness of U.S. Forces. In addition, MRADC will be effective against a broad range of ionizing radiation sources and types and will be useable throughout the full spectrum of healthcare operations.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) MRADC	0.000	1.829	0.000
<b>FY 2013 Plans:</b> Conduct development of Department of Health and Human Services (HHS) prototypes for DoD requirements.			
<b>Title:</b> 2) MRADC	0.000	2.221	0.000
<b>FY 2013 Plans:</b> Conduct preliminary animal efficacy studies to test HHS prototypes for DoD requirements.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	4.050	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>	0.000	2.027	0.000		0.000	0.000	0.000	0.000	0.000	0.000	2.027

**Remarks**

**D. Acquisition Strategy**

MRADC

The DoD is synchronizing its investments and harmonizing its portfolio with the Department of Health and Human Services (HHS) which also has a radiation countermeasure program. DoD investments will focus on DoD-unique requirements. In support of the Integrated National Biodefense Portfolio, a Memorandum of Understanding (MOU) was established between HHS and DoD to prevent duplication of efforts and create synergies in the development of MRADC. In support of the MOU, the DoD will enter into Interagency Agreements (IAAs) with the Biomedical Advanced Research and Development Authority (BARDA), HHS' advanced developer, to promote the development of MRADC and the Strategic National Medical Radiation Countermeasures Portfolio. Each contract performer whose work is supported through these IAAs will sponsor its drug to the FDA and hold all approvals and or licenses. In accordance with the MRADC revised acquisition strategy, the DoD will harmonize DoD investments with HHS investments. The DoD will invest via IAAs in HHS prototypes focusing on DoD-unique requirements as HHS, in its role as the lead developer for the Technology Development phase in a whole-of-government approach, matures the prototypes to support a DoD down-select at Milestone B.

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** MRADC - HW C - Development of candidates	C/CPIF	TBD:	0.000	0.000		1.480	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		1.480		0.000		0.000		0.000			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** MRADC - DTE C - Animal Efficacy Studies	C/CPIF	TBD:	0.000	0.000		1.796	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		1.796		0.000		0.000		0.000			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** MRADC - PM/MS C - MRADC - Management Support	C/FFP	TBD:	0.000	0.000		0.629	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
PM/MS C - MRADC - Management Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.145	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.774		0.000		0.000		0.000			0.000

			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			0.000	0.000	4.050	0.000	0.000	0.000			0.000

**Remarks**



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
** MRADC - Animal Efficacy Studies																												
MRADC - Testing of HHS Prototypes																												
MRADC - Milestone B																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> MR4: <i>MEDICAL RADIOLOGICAL DEFENSE (ACD&amp;P)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** MRADC - Animal Efficacy Studies	3	2013	4	2013
MRADC - Testing of HHS Prototypes	3	2013	4	2013
MRADC - Milestone B	1	2018	1	2018

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program										<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>				<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>			
<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO <sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	-	14.458	4.994	15.671	-	15.671	20.408	15.872	13.044	11.044	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This funding supports the Joint Project Manager Nuclear, Biological, Chemical Contamination Avoidance Product Director, Test Equipment, Strategy, and Support (PD TESS) efforts. PD TESS provides test infrastructure products for testing and evaluating chemical and biological defense systems throughout the life cycle acquisition process in support of the Milestone Decision Authority, Joint Project Managers, and the Test and Evaluation (T&E) community. PD TESS test infrastructure products are aligned in three groups to include: (1) Sense Laboratory (Chemical); (2) Sense Laboratory (Biological); and (3) Individual Protection, Collective Protection and Decontamination (Shield and Sustain).

(1) Sense Laboratory (Chemical): The product for this area is the Non-Traditional Agent Defense Test System (NTADTS). The NTADTS provides a new capability at the Edgewood Chemical Biological Center (ECBC) to conduct highly toxic materials testing using new, emerging threat agents. The NTADTS supports testing of decontamination, collective protection, individual protection, and contamination avoidance products. The CBD acquisition program supported are Dismounted Reconnaissance Sets Kits and Outfits (DR SKO), Next Generation Chemical Detector (NGCD), Decon Family of Systems (DFoS), Joint Expeditionary Collective Protection (JECPC), Joint Service Aircrew Mask - Fixed and Rotary Wing (JSAM-FW), (JSAM-RW), and Common Analytical Laboratory System (CALs).

(2) Sense Laboratory (Biological): The product for this area is the Standoff Detection Test System (SDTS). The SDTS, as a new start, will provide test and evaluation capability for the Joint Standoff Detection System (JSDS) acquisition program.

(3) Individual Protection, Collective Protection and Decontamination (Shield and Sustain): The product for this area is the Chemical Biological Agent Resistance Test Fixture (CBART). Projected location for these T&E capabilities is Dugway Proving Ground (DPG), Utah. CBART provides state of the art material swatch test fixture for individual and collective protection systems.

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

<b>Title:</b> 1) PD TESS - Non-Traditional Agent Defense Test System (NTADTS)	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
	4.070	4.794	4.929
<b>FY 2012 Accomplishments:</b> Initiated laboratory revitalization. Fabricated test chambers. Performed decontamination studies.			
<b>FY 2013 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>		<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete laboratory revitalization and fabrication of test chambers. Install test chambers and integrate test fixtures. Initiate commissioning and verification. <b>FY 2014 Plans:</b> Complete commissioning and verification. Conduct validation of facility.				
<b>Title:</b> 2) PD TESS - Bio Standoff Facility (BIOSFAC) <b>FY 2012 Accomplishments:</b> Conducted closeout of Biological Standoff Facility design activities.		1.291	0.000	0.000
<b>Title:</b> 3) PD TESS - Chemical Biological Agent Resistance Test Fixture (CBART) <b>FY 2013 Plans:</b> Transition technology from techbase and conduct studies. <b>FY 2014 Plans:</b> Initiate laboratory revitalization.		0.000	0.200	5.328
<b>Title:</b> 4) PD TESS - Standoff Detection Test System (SDTS) <b>FY 2014 Plans:</b> Initiate laboratory revitalization.		0.000	0.000	5.414
<b>Title:</b> 5) Edgewood Chemical Biological Center <b>FY 2012 Accomplishments:</b> Provided T&E infrastructure project upgrades and equipment in support of key T&E systems to advance to the current state-of-the-art capabilities. Provided enhancements for T&E safety and surety efforts at Edgewood Chemical Biological Center.		3.198	0.000	0.000
<b>Title:</b> 6) ATEC - Dugway Proving Ground <b>FY 2012 Accomplishments:</b> Provided enhancements for T&E safety and surety efforts at Dugway Proving Ground. Supported Dugway Proving Ground T&E equipment development in support of special operations forces equipment testing.		5.899	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		14.458	4.994	15.671

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TE5: <i>TEST &amp; EVALUATION (EMD)</i>	16.235	6.394	26.202		26.202	20.033	20.200	15.700	14.200	Continuing	Continuing
• TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>	3.549	4.156	3.690		3.690	3.642	2.846	2.846	2.846	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

PD TESS

PD 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 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
** PD TESS - HW S - NTA Defense Test System Design/Fabrication/Installation	C/CPFF	MRIGlobal:Kansas City, MO	29.500	2.348	Mar 2012	1.800	Jun 2012	2.700	Mar 2014	-		2.700	Continuing	Continuing	0.000
HW S - NTA Defense Test System Design/Fabrication/Installation	MIPR	Various:	8.141	0.795	Mar 2012	0.592	Mar 2013	1.833	Mar 2014	-		1.833	Continuing	Continuing	0.000
HW S - Bio Standoff Facility Feasibility/Design	MIPR	Dugway Proving Ground (DPG):Dugway, UT	3.276	1.000	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - Standoff Detection Test System - Initiation/Design	MIPR	TBD:	0.000	0.000		0.000		5.333	Mar 2014	-		5.333	Continuing	Continuing	0.000
HW S - Chemical Biological Agent Resistance Test Fixture - Initiation/Design	MIPR	TBD:	0.000	0.000		0.100	Mar 2013	2.334	Mar 2014	-		2.334	Continuing	Continuing	0.000
HW C - T&E safety and surety efforts	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	3.198	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW C - T&E infrastructure project upgrades and equipment	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	5.899	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			40.917	13.240		2.492		12.200		0.000		12.200			0.000

<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
** PD TESS - ES S - Integrated Product Team (IPT) Support	MIPR	Various:	3.667	0.932	Mar 2012	1.753	Mar 2013	1.556	Dec 2013	-		1.556	Continuing	Continuing	0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>
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FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
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 - Biological Standoff Facility (BIOSFAC) Closeout Activities	
PD TESS - CBART- Fixture Initiation/Design	
PD TESS - Standoff Detection Test System (SDTS) Initiation/Design	



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TE4: <i>TEST &amp; EVALUATION (ACD&amp;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	2012	4	2014
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents	4	2014	4	2018
PD TESS - Biological Standoff Facility (BIOSFAC) Closeout Activities	1	2012	4	2012
PD TESS - CBART- Fixture Initiation/Design	1	2013	4	2016
PD TESS - Standoff Detection Test System (SDTS) Initiation/Design	1	2014	4	2014

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>	-	2.985	3.377	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.362
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (TT4) validates high-risk/high-payoff technologies, concepts-of-operations, and reconnaissance and surveillance platforms 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 from laboratory experiments to acquisition programs through risk reduction, engineering and integration. These demonstrations and programs seek to demonstrate the potential for enhanced military operational capability and/or cost effectiveness. Upon conclusion of the technical and operational demonstrations, the user or sponsor provides a determination of the military utility and operational impact of the technology and capability demonstrated. Successfully demonstrated technologies with proven military utility can either be left in place for extended user evaluations, accepted into advanced stages of the formal acquisition process, proceed directly into limited or full-scale production or be returned to the technical base for further development. This project funds three family of products areas (one of which is a new thrust areas to address DoD emphasis on an interagency collaboration for biological detection, surveillance, recovery and resilience and is annotated as such below): Hazard Mitigation, Early Warning, and Biological Resiliency. Hazard Mitigation addresses Chemical, Biological, and Radiological (CBR) remediation and decontamination processes and demonstrates technologies and methods to restore assets such as mobile equipment, fixed sites, critical infrastructures, personal, and equipment to operational status as a result of having reduced or eliminated CBR contamination. The Early Warning family of products achieve enhanced command and control decision making capabilities as a result of a combined and orchestrated family of chemical and biological defense systems deployed on various platforms in remote locations. Biological Resiliency efforts are targeted to reduce biological threats by: (1) improving DoD access to the life sciences to combat infectious disease regardless of its cause; (2) establishing and reinforcing DoD concept of operations (CONOPS) against the misuse of the life sciences; and (3) instituting a suite of coordinated DoD and interagency activities that collectively will help influence, identify, inhibit, and/or interdict those who seek to misuse the life sciences.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) TT DEMO - Hazard Mitigation	0.415	0.000	0.000
<b>Description:</b> Hazard Mitigation Material and Equipment Restoration (HaMMER)			
<b>FY 2012 Accomplishments:</b>			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Conducted operational demonstration and final Technology Readiness Assessment (TRA).			
<b>Title:</b> 2) TT DEMO - Early Warning <b>Description:</b> Rapid Area Surveillance/Reconnaissance (RASR)  <b>FY 2012 Accomplishments:</b> Conducted operational and technical reachback demonstrations. Conducted final Technology Readiness Assessment (TRA).	0.241	0.000	0.000
<b>Title:</b> 3) TT DEMO - Biological Resiliency <b>Description:</b> Transatlantic Collaborative Biological Recovery Demonstration (TaCBRD)  <b>FY 2012 Accomplishments:</b> Initiated concept exploration and risk reduction efforts through several Technology Transition Exercise (TTX). Completed baseline study to understand capability gaps associated with partner nation recovery and resilience in an overseas environment. In FY13, this research area was realigned within TT4 to TECHTRAN.	2.329	0.000	0.000
<b>Title:</b> 4) TECHTRAN - TaCBRD <b>Description:</b> Transatlantic Collaborative Biological Recovery Demonstration (TaCBRD)  <b>FY 2013 Plans:</b> Initiate Coalition Warfare Program S&T efforts with international partner in EUCOM Area Of Responsibility (AOR). Conduct persistent agent fate and contagious bio agent information systems studies, technical demonstrations and exercises. Initiate bio-resiliency planning efforts in a second AOR. In FY13, this research area was realigned within TT4 from TT DEMO.	0.000	3.377	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	2.985	3.377	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• TE3: <i>TEST &amp; EVALUATION (ATD)</i>	10.306	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	10.306
• TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>	0.000	0.000	6.706		6.706	6.257	6.575	8.196	7.852	Continuing	Continuing

**Remarks**

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Chemical and Biological Defense Program DATE: April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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**D. Acquisition Strategy**

TECHTRAN

The Advanced Technology Demonstrations (ATDs) and Joint Capability Technology Demonstrations (JCTDs) exploit mature and maturing technologies to solve important military problems. ATDs and JCTDs emphasize technology assessment and integration rather than technology development. The goal is to provide a prototype capability to the Warfighter and to support in the evaluation of that capability. The Warfighters evaluate the capabilities in real military exercises and at a scale sufficient to fully assess military utility. When possible, the ATDs will leverage results from existing chemical and biological science and technology (S&T) efforts and prior ATDs. Market research/baselining is performed prior to ATD initiation to determine if a suitable solution exists or whether a solicitation/sole source is required to develop a solution. The ATDs are typically managed by DoD, Federally Funded Research Development Centers (FFRDCs) or University Affiliated Research Centers (UARCs). This is done through the Military Interdepartmental Purchase Request (MIPR) or the Interagency Cost Reimbursable Order (IACRO) in accordance with the Economy Act. In addition, the ATDs utilize the Defense Threat Reduction Agency (DTRA) Broad Area Announcement process to fund promising technologies between Technology Readiness Level (TRL) 4 and TRL 6. The ATD manager, who is typically responsible for total system development, can subcontract industry, academia, or other government agencies to perform individual component development.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** TT DEMO - HW C - HaMMER Product Development	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.125	Jan 2012	0.000		0.000		-		0.000	0.000	0.125	0.000
HW C - (EW) RASR Product Development	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	1.150	0.075	Jan 2012	0.000		0.000		-		0.000	0.000	1.225	0.000
HW C - TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.500	Dec 2011	0.000		0.000		-		0.000	0.000	0.500	0.000
HW C- TaCBRD ATD	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.394	Dec 2011	0.000		0.000		-		0.000	0.000	0.394	0.000
** TECHTRAN - HW C- TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.792	Dec 2012	0.000		-		0.000	0.000	0.792	0.000
HW C-TaCBRD ATD	MIPR	Air Force Research Laboratory (AFRL):Wright Patterson AFB, OH	0.000	0.000		0.485	Dec 2012	0.000		-		0.000	0.000	0.485	0.000
<b>Subtotal</b>			1.150	1.094		1.277		0.000		0.000		0.000	0.000	3.521	0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** TT DEMO - ILS S - HaMMER System Support	MIPR	USA Research Dev & Engr Cmd (RDECOM):Aberdeen Proving Ground, MD	0.000	0.125	Jan 2012	0.000		0.000		-		0.000	0.000	0.125	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ILS C- TaCBRD ATD	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.240	Dec 2011	0.000		0.000		-		0.000	0.000	0.240	0.000
ILS C-TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.445	Dec 2011	0.000		0.000		-		0.000	0.000	0.445	0.000
ILS S - RASR ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.075	Jan 2012	0.000		0.000		-		0.000	0.000	0.075	0.000
** TECHTRAN - ILS C - TaCBRD ATD	MIPR	Air Force Research Laboratory (AFRL):Wright Patterson AFB, OH	0.000	0.000		0.300	Dec 2012	0.000		-		0.000	0.000	0.300	0.000
ILS C -TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.500	Dec 2012	0.000		-		0.000	0.000	0.500	0.000
ILS C -TaCBRD ATD #2	MIPR	US European Command (USEUCOM):Stuttgart Baden-Wuerttemberg, GE	0.000	0.000		0.300	Dec 2012	0.000		-		0.000	0.000	0.300	0.000
<b>Subtotal</b>			0.000	0.885		1.100		0.000		0.000		0.000	0.000	1.985	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** TT DEMO - OTE S - HaMMER System Testing	MIPR	Edgewood Chemical Biological Center	0.000	0.125	Jan 2012	0.000		0.000		-		0.000	0.000	0.125	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		(ECBC):Aberdeen Proving Ground, MD													
OTE S - RASR System Testing	MIPR	Army Test and Evaluation Command (ATEC):Aberdeen Proving Ground, MD	0.000	0.075	Jan 2012	0.000		0.000		-		0.000	0.000	0.075	0.000
OTE C-TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.400	Dec 2011	0.000		0.000		-		0.000	0.000	0.400	0.000
OTE C-TaCBRD ATD #2	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.200	Dec 2011	0.000		0.000		-		0.000	0.000	0.200	0.000
** TECHTRAN - OTE C-TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.750	Dec 2012	0.000		-		0.000	0.000	0.750	0.000
OTE C-TaCBRD ATD #3	MIPR	Air Force Research Laboratory (AFRL):Wright Patterson AFB, OH	0.000	0.000		0.250	Dec 2012	0.000		-		0.000	0.000	0.250	0.000
<b>Subtotal</b>			0.000	0.800		1.000		0.000		0.000		0.000	0.000	1.800	0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** TT DEMO - PM/MS S - HaMMER System Program Management	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.040	Jan 2012	0.000		0.000		-		0.000	0.000	0.040	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM/MS S - RASR Program Management	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.016	Jan 2012	0.000		0.000		-		0.000	0.000	0.016	0.000
PM/MS C - TaCBRD ATD	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	0.000	0.050	Dec 2011	0.000		0.000		-		0.000	0.000	0.050	0.000
PM/MS C -TaCBRD ATD	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.100	Dec 2011	0.000		0.000		-		0.000	0.000	0.100	0.000
<b>Subtotal</b>			0.000	0.206		0.000		0.000		0.000		0.000	0.000	0.206	0.000
<b>Project Cost Totals</b>			1.150	2.985		3.377		0.000		0.000		0.000	0.000	7.512	0.000

**Remarks**



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
** TT DEMO - (EW) Rapid Area-Scan Sensitive-site Reconnaissance (RASR)																												
TT DEMO - Hazard Mitigation, Material and Equipment Restoration (HaMMER)																												
TT DEMO - TaCBRD ATD																												
** TECHTRAN - TT DEMO TaCBRD ATD																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603884BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>PROJECT</b> TT4: <i>TECHBASE TECHNOLOGY TRANSITION (ACD&amp;P)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** TT DEMO - (EW) Rapid Area-Scan Sensitive-site Reconnaissance (RASR)	1	2012	4	2012
TT DEMO - Hazard Mitigation, Material and Equipment Restoration (HaMMER)	1	2012	4	2012
TT DEMO - TaCBRD ATD	1	2012	4	2012
** TECHTRAN - TT DEMO TaCBRD ATD	1	2013	4	2014

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	308.791	311.071	451.306	-	451.306	408.758	385.696	302.252	352.926	Continuing	Continuing
CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>	-	52.854	33.018	36.766	-	36.766	58.170	68.535	45.458	67.888	Continuing	Continuing
CM5: <i>HOMELAND DEFENSE (EMD)</i>	-	8.984	9.952	18.533	-	18.533	1.600	0.000	0.000	0.000	0.000	39.069
CO5: <i>COLLECTIVE PROTECTION (EMD)</i>	-	12.451	10.642	13.300	-	13.300	2.600	0.000	0.000	0.000	0.000	38.993
DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>	-	0.000	9.324	2.412	-	2.412	8.506	17.961	17.417	31.827	Continuing	Continuing
IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	-	13.325	15.971	26.296	-	26.296	13.672	17.292	9.411	8.522	Continuing	Continuing
IS5: <i>INFORMATION SYSTEMS (EMD)</i>	-	4.699	2.045	9.267	-	9.267	17.636	20.643	15.471	17.508	Continuing	Continuing
MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	-	197.907	212.056	263.443	-	263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	-	2.336	9.642	55.087	-	55.087	58.342	57.675	47.340	28.759	Continuing	Continuing
MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>	-	0.000	2.027	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.027
TE5: <i>TEST &amp; EVALUATION (EMD)</i>	-	16.235	6.394	26.202	-	26.202	20.033	20.200	15.700	14.200	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Chemical and Biological Defense Program DATE: April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>
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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 non-medical 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.

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 remove chemical detection for ground, aircraft, and shipboard applications; automated warning and reporting systems; integrated radiation detection and monitoring equipment; and enhanced battlefield reconnaissance capabilities. Force protection efforts will increase protection levels while decreasing physical and psychological burdens imposed by protective equipment.

The DoD Biological Defense mission requires the detection of validated biological threat agents to provide early warning capabilities on mobile and fixed platforms. This program, element will provide theater protection through the development of point and stand-off detection systems. The detection system concept will provide detection, identification, warning, and sample collection for verification that a biological agent attack has occurred.

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 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. DoD is the only Federal activity conducting SDD on these prophylactic, therapeutic and rapid identification and diagnostic CB medical countermeasures.

The Department of Defense coordinates its efforts with the Departments of Health and Human Services to promote synergy and minimize redundancy. This 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.

Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. Approximately \$148.4M supports the priority to "Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural,

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>
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accidental, or deliberate events." Approximately \$61.8M supports the priority to "Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities." Approximately \$288.3M supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents."

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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	316.608	311.071	416.915	-	416.915
Current President's Budget	308.791	311.071	451.306	-	451.306
Total Adjustments	-7.817	0.000	34.391	-	34.391
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.464	0.000			
• SBIR/STTR Transfer	-4.353	0.000			
• Other Adjustments	0.000	0.000	34.391	-	34.391

**Change Summary Explanation**

Funding: Adjustments less than 10% of total program.

Schedule: N/A

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>	-	52.854	33.018	36.766	-	36.766	58.170	68.535	45.458	67.888	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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.

Efforts included in this project are: (1) Chemical, Biological, Radiological, and Nuclear Dismounted Reconnaissance Systems (CBRN DRS); (2) Joint Biological Point Detection System (JBPDS); (3) Joint Biological Tactical Detection System (JBTDSD); (4) Non-Traditional Agent (NTA) Defense Support; (5) Non-Traditional Agent (NTA) Detection Support; and (6) Sensor Suite Integration for NBC Reconnaissance Systems (SSI NBCRS).

The CBRN Dismounted Reconnaissance Systems (CBRN DRS) consists of portable, commercial and government off-the-shelf equipment to provide personnel protection from current and emerging CBRN hazards and detection, identification, sample collection, decontamination, marking, and hazard reporting of CBRN threats. The system supports dismounted Reconnaissance, Surveillance, and CBRN Site Assessment missions to enable more detailed CBRN information reports for commanders. The program will support emerging CBRN threat capability to provide an enhanced capability in the future.

The Joint Biological Point Detection System (JBPDS) is a fully automated system that detects, warns, and provides presumptive identification and samples for follow-on confirmatory analysis. It is an ACAT II program in Full Rate Production. The Army platforms include the JBPDS on the Biological Integrated Detection System (BIDS) and the Stryker Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV). The Navy installs the JBPDS on several classes of ships such as Cruisers and Amphibious Transports. Engineering Changes to refresh the technology of the JBPDS consists of two separate efforts (one funded by procurement and one RDT&E funded) that, when combined, will reduce lifecycle costs and address obsolescence concerns. The existing computer hardware and operating system in the JBPDS will not meet Information Assurance standards due to obsolescence. Under the existing production contract, an engineering effort is underway to address the computer and operating system obsolescence concerns. The element being developed under RDT&E funding is a new detector technology that will significantly reduce false positives resulting in improved reliability, reduced consumable use, and reduction in operational and sustainment costs.

The Joint Biological Tactical Detection System (JBTDSD) will integrate, test and produce the first lightweight (less than 37 lbs), low cost biological surveillance system that will detect, collect and identify biological warfare agent aerosols. JBTDSD will provide warning through the Joint Warning And Reporting Network (JWARN) and archive samples for follow-on analyses. JBTDSD will provide near real-time local audio and visual alarm for use by any Military Occupational Specialty (MOS). JBTDSD components will be man-portable, battery-operable and easy to employ. JBTDSD will be used organically at battalion level and below and provide notification of a

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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hazard and enhanced 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. Units equipped with JBTDS will conduct biological surveillance missions to detect BWA aerosol clouds, collect a sample, and identify the agent to support time sensitive force protection decisions. JBTDS will leverage potential common identification technology solutions to the three programs. JBTDS is part of the Biological Recapitalization strategy for biological point systems.

The Non-Traditional Agent (NTA) Defense program will support the chemical and biological (CB) challenges in which are dynamic and encompass the entire range of military operations. Dedicated initiatives and projects will explore these challenges outline and transition information, technologies, and capability into acquisition strategies that account for the breadth and depth of emerging threats that span the full range of military essential missions. By leveraging previous work done on NTAs within the DoD, the interagency, and international, these efforts will provide essential enablers of a comprehensive, integrated, and layered defense against current CB threats and develop a balanced portfolio targeted at capabilities that preclude technological surprise from emerging threats.

The Non-Traditional Agent (NTA) Detection projects will develop, procure and advance detection and identification system(s) through follow-on technology insertion that will enhance the Domestic Response Capability (DRC), Advanced Threat (AT) Box, CBRN DRS (Dismounted Reconnaissance Sets, Kits, and Outfits), and Next Generation Chemical Detector programs to attain situational awareness and respond to emerging and escalating threats. The projects will test, optimize and advance technology capabilities provided within the fielded NTA detection components and explore the passive defense mission space. The products provide a mid-term capability to detect priority emerging threat materials and afford the Warfighter the ability to support domestic response and force protection missions. These products leverage common core technologies to detect and identify threats that can be exploited for lab deployable, fixed site and handheld applications. Additional efforts include conducting systems engineering analysis to prioritize capability gaps and outline issues that require investment.

Sensor Suite Integration for NBC Reconnaissance Systems (SSI NBCRS) evaluated technologies' ability to provide biological warfare agents (BWA), liquid Chemical Warfare Agent (CWA), Toxic Industrial Chemical (TIC), and Non-Traditional Agent (NTA) identification using a single detection technology. This effort evaluated potential capability improvements with significant cost savings to the Warfighter by reducing consumables, reducing false alarms, and providing the ability to rapidly upgrade to detect emerging threats. The program demonstrated a modular, "plug and play" capability to support mounted and dismounted CBRN reconnaissance, fixed site, lab deployable, and handheld applications. Feasibility of a single sensor concept for CWA, TIC, and biological aerosols were demonstrated in technology evaluation. A low volatile chemical surface contamination detection capability will provide improved identification of CWAs, TICs, and NTAs. Continued prototype development will mitigate risk for future programs including NTA Detection products and Next Generation Chemical Detector.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) CBRN DRS - Dismounted Reconnaissance Sets, Kits, and Outfits (DR SKO)	4.478	3.700	0.720
<b>FY 2012 Accomplishments:</b> Continued documentation, systems engineering, and design to support MS C. Continued IPT support.			
<b>FY 2013 Plans:</b> Continue documentation, systems engineering, and design to support MS C LRIP. Continue IPT support.			
<b>FY 2014 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete documentation, systems engineering, and design to support FRP. Continue IPT support.				
<b>Title:</b> 2) CBRN DRS - DR SKO <b>FY 2012 Accomplishments:</b> Completed component and system level developmental testing. <b>FY 2013 Plans:</b> Initiate and complete Multi-Service Operational Test and Evaluation (MOT&E). Initiate Failure Mode, Effects, and Criticality Analysis (FMECA). <b>FY 2014 Plans:</b> Complete verification and assessment of Failure, Mode, Effects, and Criticality Analysis (FMECA).		4.750	5.556	0.950
<b>Title:</b> 3) CBRN DRS - DR SKO <b>FY 2012 Accomplishments:</b> Initiated and completed Operational Assessment for DR SKO. Continued technical manual development and logistics products development. <b>FY 2013 Plans:</b> Complete technical manual development. Continue logistics products development. <b>FY 2014 Plans:</b> Complete logistics products development.		3.601	3.450	0.330
<b>Title:</b> 4) CBRN DRS - DR SKO <b>FY 2012 Accomplishments:</b> Initiated retrofit of System Development and Demonstration (SDD) systems. <b>FY 2013 Plans:</b> Complete retrofit of System Development and Demonstration (SDD) systems.		3.600	1.975	0.000
<b>Title:</b> 5) CBRN DRS - Emerging Threats <b>FY 2012 Accomplishments:</b> Assessed emerging technical solutions from Operational Needs Statement (ONS) investments.		3.861	0.000	0.000
<b>Title:</b> 6) JBPDS <b>FY 2012 Accomplishments:</b>		1.043	0.148	0.000



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continued strategic and tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, and technical support. <b>FY 2013 Plans:</b> Complete strategic and tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, and technical support.				
<b>Title:</b> 7) JBPDS <b>FY 2012 Accomplishments:</b> Continued development of a new detector for the JBPDS program. <b>FY 2013 Plans:</b> Complete development of a new detector for the JBPDS program.		6.199	1.197	0.000
<b>Title:</b> 8) JBPDS <b>FY 2012 Accomplishments:</b> Completed component level testing of the new detector.		0.844	0.000	0.000
<b>Title:</b> 9) JBPDS <b>FY 2012 Accomplishments:</b> Built eight (8) engineering development units (\$175,000 each).		1.400	0.000	0.000
<b>Title:</b> 10) JBTDS <b>FY 2014 Plans:</b> Initiate System Development and Demonstration (SDD) Contract (60 components/systems @ \$290,000 each).		0.000	0.000	17.401
<b>Title:</b> 11) JBTDS <b>FY 2014 Plans:</b> Initiate development testing phase 1 on SDD systems.		0.000	0.000	3.000
<b>Title:</b> 12) JBTDS <b>FY 2013 Plans:</b> Initiate and complete development of production process for ten aerosol agents and interferents for SDD (System Development and Demonstration) test phase.		0.000	3.000	0.000
<b>Title:</b> 13) JBTDS <b>FY 2013 Plans:</b>		0.000	0.280	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiate and finalize characterization of ten aerosol interferents for developmental testing.				
<b>Title:</b> 14) JBTDS		0.000	1.600	0.000
<b>FY 2013 Plans:</b> Initiate and finalize validation of Dynamic Concentration Aerosol Generator (DYCAG).				
<b>Title:</b> 15) JBTDS		0.000	0.995	0.000
<b>FY 2013 Plans:</b> Initiate and finalize modeling effort for characterization of indoor referee equipment for developmental test phase.				
<b>Title:</b> 16) JBTDS		0.000	2.823	2.799
<b>FY 2013 Plans:</b> Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support.				
<b>FY 2014 Plans:</b> Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support.				
<b>Title:</b> 17) JBTDS		0.000	1.264	1.614
<b>FY 2013 Plans:</b> Provide Operation Test Agency (OTA) and Service representation (i.e. integrated product teams and working groups).				
<b>FY 2014 Plans:</b> Continue Operation Test Agency (OTA) and Service representation (i.e. integrated product teams and working groups).				
<b>Title:</b> 18) NTA DEFENSE - Threat Understanding/Military Utility and Supportability		0.000	0.000	2.759
<b>FY 2014 Plans:</b> Initiate analysis of threat understanding and combat developer provided operational analysis to ascertain technology and training gaps in multiple missions. Leverage previous work done under NTA Detect to fully challenge outputs of threat and operational phenomenology. Centralize the analysis outputs and extend threat phenomenology methodology to all commodities.				
<b>Title:</b> 19) NTA DEFENSE - Systems Engineering		0.000	0.000	2.174
<b>FY 2014 Plans:</b>				

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiate detection focused systems engineering model tools and update to reflect and account for protection, medical, and decontamination. Begin to refine model in preparation for verification.				
<b>Title:</b> 20) NTA DEFENSE - Test and Evaluation		0.000	0.000	3.360
<b>FY 2014 Plans:</b> Initiate emerging threat test bed 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.				
<b>Title:</b> 21) NTA DEFENSE - Technology Assessments		0.000	0.000	1.159
<b>FY 2014 Plans:</b> Initiate synchronization of acquisition strategies across the CBDP, Interagency, and International Community for all NTA initiatives. Conduct assessments and coordinate science and technology transition through Enterprise Wide IPT for whole of government.				
<b>Title:</b> 22) NTA DETECT - COTS/GOTS Mission Analysis		2.999	1.201	0.000
<b>FY 2012 Accomplishments:</b> Completed analysis for Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) evaluation for use in urgent need fieldings. Continued to explore the impact of emerging threats in asymmetric threat scenarios and developed models to increase understanding of threat impacts to a mission. Initiated gap analyses to identify future needs to adequately test technology solutions. Compiled all relevant emerging threat data into a single repository.				
<b>FY 2013 Plans:</b> Continue gap analyses to identify future needs to adequately test technology solutions. Continue to refine and update source books for additional classes of emerging threats. Gap analysis, source book development, and testing of COTS/GOTS will transition to the NTA Defense funding line in FY14. These efforts will support acquisition and integration of equipment for the DR SKO and CALS acquisition programs.				
<b>Title:</b> 23) NTA DETECT - DESI Mass Spectrometer (MS)		1.290	1.540	0.250
<b>FY 2012 Accomplishments:</b> Initiated engineering to support improved system health monitoring, sampling techniques, reliability and detection algorithm of the DESI-MS. Technology challenges forced a refocus on improving the original DESI-MS capability before continuing to a man-portable version.				
<b>FY 2013 Plans:</b>				

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete engineering and testing to support improved system health monitoring, sampling techniques, reliability and detection algorithm of the DESI-MS. Integrate and test improved sampling techniques. <b>FY 2014 Plans:</b> Develop capability to more easily add chemicals to the MS/MS algorithm.				
<b>Title:</b> 24) NTA DETECT - Environmental Monitor <b>FY 2012 Accomplishments:</b> Continued engineering and DT to optimize and ruggedize environmental monitoring COTS capability. Continued DT to assess performance of environmental monitoring capability including Chemical Hazard Indicating and Ranging Pack (CHIRP) and Instantaneous Biological Aerosol Collector (IBAC) for Chem. Refined and updated test capability for aerosol testing. <b>FY 2013 Plans:</b> Initiate and complete systems engineering design optimization of a vapor and aerosol environmental monitor for an identified Program of Record (POR). Complete whole system DT to include more representative environments to support force protection and domestic response mission. Transition as possible candidate technology to Next Generation Chemical Detector (NGCD) and/or future increments of the AT/DRC box. Continue optimizing inclusion of other threat chemistries into IBAC for Chem. <b>FY 2014 Plans:</b> Conduct a military utility assessment of the environmental monitor in representative mission applications.		1.990	2.175	0.250
<b>Title:</b> 25) NTA DETECT - Sensitive Site Assessment and Consequence Management Gaps <b>FY 2012 Accomplishments:</b> Completed integration of NTA detection capability with CBRN DRC to provide enhanced NTA detection solution for Sensitive Site Assessment (SSA) and Consequence Management (CM) mission areas. Completed threat phenomenology on NTAs to verify and finalize detection capability shortfalls and critical data gaps for SSA and CM mission areas.		3.392	0.000	0.000
<b>Title:</b> 26) NTA DETECT - Systems Engineering <b>FY 2012 Accomplishments:</b> Developed systems engineering analysis methodology to prioritize technology investment strategies for SSA and CM missions, updated database sourcebooks. <b>FY 2013 Plans:</b> Refine systems engineering methodology and incorporate into a model to verify detection technology investment strategies for SSA and CM missions, continue to update database sourcebooks and continue threat understanding.		3.353	2.114	0.000
<b>Title:</b> 27) SSI NBCRS		3.516	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2012 Accomplishments:</i></b> Completed program management, systems engineering, and Integrated Product Team (IPT) support.			
<b><i>Title:</i></b> 28) SSI NBCRS	2.452	0.000	0.000
<b><i>FY 2012 Accomplishments:</i></b> Completed CB sensor test and evaluation of 19 vendor systems to transition to the Next Generation Chemical Detection (NGCD).			
<b><i>Title:</i></b> 29) SSI NBCRS	4.086	0.000	0.000
<b><i>FY 2012 Accomplishments:</i></b> Completed low volatile sensor test support, development, and evaluation efforts.			
<b>Accomplishments/Planned Programs Subtotals</b>	52.854	33.018	36.766

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	13.432	3.038	26.853		26.853	46.788	40.163	34.595	2.873	Continuing	Continuing
• JC0100: <i>JOINT BIO POINT DETECTION SYSTEM (JBPDS)</i>	20.669	30.934	52.732		52.732	121.893	10.000	0.000	0.000	0.000	236.228
• JF0100: <i>JOINT CHEMICAL AGENT DETECTOR (JCAD)</i>	46.136	15.212	47.598		47.598	47.024	47.971	49.688	0.000	Continuing	Continuing
• JN0900: <i>NON TRADITIONAL AGENT DETECTION (NTAD)</i>	3.687	4.770	8.000		8.000	0.000	0.000	0.000	0.000	0.000	16.457
• MC0100: <i>JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)</i>	51.944	96.244	0.000		0.000	0.000	0.000	0.000	0.000	0.000	148.188
• MC0101: <i>CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)</i>	6.624	15.080	34.998		34.998	81.258	98.272	105.000	120.326	Continuing	Continuing
• MX0001: <i>JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)</i>	0.000	0.000	0.000		0.000	0.000	0.000	11.691	37.051	Continuing	Continuing

**Remarks**

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**D. Acquisition Strategy**

**CBRN DRS**

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 to full capability acquisition approach. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and technology opportunities into a stable, affordable, and well-managed acquisition program.

**JBPDS**

The technology update for the detector focuses on the Rapid Agent Aerosol Detector (RAAD); being developed by MIT-LL with producibility and logistics support from Kansas City Plant (KCP). A competitive solicitation will be issued for RAAD full rate production. KCP will transition RAAD production to industry with the use of a technical data package. The RAAD contractor will provide the new biological warfare agent detector to the JBPDS prime contractor. Through an Engineering Change Order the prime contractor has initiated system integration efforts to accept the new detector technology.

**JBTDS**

The JBTDS is being developed using an evolutionary acquisition strategy. JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology. The awards for competitive prototyping utilized best value approach via the competitive CBRNE mission support contract to three contractor teams. Full and open competition will be utilized at MS B for the SDD contract with options for Low Rate Initial Production and Full Rate Production. Coordination with other programs (Common Analytical Laboratory System and Next Generation Diagnostic System) is occurring to share information and leverage potential common identification technology solutions to the three programs.

**NTA DEFENSE**

The Non-Traditional Agent Defense products will provide incremental acquisition information, technology, and evaluation testbeds to afford acquisition programs the ability to develop capabilities for the Warfighter. The ability to attain situational awareness and respond to any unknown and emerging threat hazard will be attained through these incremental transitions to acquisition programs. By leveraging previous work done on NTAs within the DoD, the interagency, and internationally, the NTA Defense will provide essential enablers of a comprehensive, integrated, and layered defense against current CB threats and develop a balanced portfolio targeted at capabilities that preclude technological surprise from emerging threats.

**NTA DETECT**

The Non-Traditional Agent (NTA) Detection products will provide a detection capability through incremental acquisition that will afford the Warfighter ability to attain situational awareness and respond to unknown and emerging hazards. Leveraging COTS/GOTS assessments will be used in order to lower program risks, reduce

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costs, and ensure a higher confidence in selected technologies. The project will continue to address next priority mission areas and threats by continuing to qualify identified detection equipment. To accomplish these efforts, various competitive contracting strategies will be used, i.e., cost plus type contracts, task orders, and IDIQ.

SSI NBCRS

A cost plus fixed fee contract was awarded to assist in program development and integration. The Sensor Suite and Integration for Nuclear Biological and Chemical Reconnaissance System (SSI NBCRS) evaluated the state of Chemical and Biological sensor manufacturing to support future acquisition programs. A technical evaluation was performed on four separate Cost plus Fixed Fee (CPFF) task orders using a competitive omnibus contract. The evaluation focused on using a common sensor technology to detect and identify both chemical and biological threats. Efforts are ongoing to evaluate modularizing, allowing for application on potential mounted and dismounted reconnaissance, lab deployable and fixed site systems.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - HW S - DR SKO SDD systems	C/CPFF	FLIR Systems Inc.:Elkridge, MD	0.000	3.650	Mar 2012	1.975	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Emerging Threat Mobile Lab	C/CPFF	FLIR Systems Inc.:Elkridge, MD	0.000	0.472	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JBPDS - HW C - New Detector development	MIPR	Marine Forces Pacific (MARFORPAC) Pacific Command (PACOM):Camp Smith, HI	0.991	6.199	Mar 2012	1.197	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW C - Built 8 units	MIPR	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	1.400	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JBTDS - HW C - SDD Contract Award	C/CPFF	TBD:	0.000	0.000		0.000		17.401	Dec 2013	-		17.401	Continuing	Continuing	0.000
** NTA DEFENSE - SW C - Mass Spectroscopy, Infrared Spectroscopy, and Other	C/CPFF	Various:	0.000	0.000		0.000		0.600	Mar 2014	-		0.600	Continuing	Continuing	0.000
HW S - System Performance Baseline	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.000		1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
** NTA DETECT - HW S - DESI Mass Spec	C/CPFF	FLIR Systems Inc.:West Lafayette, IN	1.373	0.000		0.250	Mar 2013	0.210	Mar 2014	-		0.210	Continuing	Continuing	0.000
HW S - GOTS/COTS Dual Use Assessment	C/CPFF	Battelle Memorial Institute:Columbus, OH	2.597	2.200	Mar 2012	0.671	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
SW S - DESI Mass Spec Library Development	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.819	0.200	Mar 2012	0.700	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - Environmental Monitor	C/CPFF	FLIR Systems Inc.:Pittsburgh, PA	2.503	0.194	Sep 2012	1.300	Sep 2013	0.000		-		0.000	Continuing	Continuing	0.000



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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HW S - Sampling	FFRDC	Naval Research Lab (NRL):Washington, DC	0.000	0.400	Sep 2012	0.300	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** SSI NBCRS - HW S - Chemical Biological Sensor Capability Development	C/CPFF	Various:	0.000	2.452	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			8.283	17.167		6.393		19.211		0.000		19.211			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CBRN DRS - ES S - DR SKO Logistics Products	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.619	Mar 2012	0.400	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
ILS S - DR SKO Logistics Products	C/CPFF	FLIR Systems Inc.:Elkridge, MD	0.000	2.554	Mar 2012	3.050	Mar 2013	0.330	Mar 2014	-		0.330	Continuing	Continuing	0.000
** JBTD S - ES S - OTA & Service Representation	MIPR	Various:	0.000	0.000		1.264	Mar 2013	1.614	Mar 2014	-		1.614	Continuing	Continuing	0.000
ES S - Calibration Effort	MIPR	Naval Research Lab (NRL):Washington, DC	0.000	0.000		1.600	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES S - Characterize dissemination equipment	MIPR	Institute for Defense Analysis (IDA):Alexandria, VA	0.000	0.000		0.995	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NTA DEFENSE - ES S - Systems Engineering	C/CPFF	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	0.000		0.000		1.015	Mar 2014	-		1.015	Continuing	Continuing	0.000
ES S - Analysis and Evaluation	MIPR	Various:	0.000	0.000		0.000		1.417	Jun 2014	-		1.417	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ES S - Integrated Product Team (IPT) Support	MIPR	Various:	0.000	0.000		0.000		0.920	Dec 2013	-		0.920	Continuing	Continuing	0.000
** NTA DETECT - ES SB - COTS/GOTS Analysis and Evaluation	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.078	Mar 2012	0.165	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES S - Systems engineering support	C/CPFF	Joint Research and Development Inc.:Stafford, VA	0.381	1.331	Mar 2012	0.894	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES S - Environmental Monitor	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	0.000		0.000		0.210	Mar 2014	-		0.210	Continuing	Continuing	0.000
ES S - Mass Spectrometer	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	0.600	Mar 2012	0.200	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES S - Integrated Product Team (IPT) Support #2	MIPR	Various:	0.000	0.776	Dec 2011	0.110	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.381	5.958		8.678		5.506		0.000		5.506			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CBRN DRS - DTE S - DR SKO Developmental Testing and Operational Assessment	MIPR	Various:	0.000	3.057	Mar 2012	5.556	Mar 2013	0.950	Mar 2014	-		0.950	Continuing	Continuing	0.000
DTE S - DR SKO Developmental Testing and Operational Assessment	C/CPFF	FLIR Systems Inc.:Elkridge, MD	0.000	2.760	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DTE C - Emerging Threat Enhancements	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	2.700	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBPDS - DTE C - New Detector developmental testing.	MIPR	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	0.844	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JBTDS - DTE SB - Production process for ten agents	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	0.000		3.000	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE S - DT 1 Testing	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	0.000		0.000		1.500	Mar 2014	-		1.500	Continuing	Continuing	0.000
DTE S - DT 1 Testing #2	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	0.000	0.000		0.000		0.500	Mar 2014	-		0.500	Continuing	Continuing	0.000
DTE S - DT 1 Testing #3	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
DTE S - Characterization of aerosol interferents	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.280	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NTA DEFENSE - DTE C - Developmental Tests Component	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.000		1.101	Mar 2014	-		1.101	Continuing	Continuing	0.000
DTE S - DT Test and Evaluation Support	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.159	Mar 2014	-		1.159	Continuing	Continuing	0.000
OTE S - Operational Assessment	C/CPFF	MA Institute of Tech - Lincoln Labs (MIT-LL):Lexington, MA	0.000	0.000		0.000		1.100	Mar 2014	-		1.100	Continuing	Continuing	0.000
** NTA DETECT - DTE S - Developmental Test Component	C/CPFF	Battelle Memorial Institute:Columbus, OH	5.087	3.400	Mar 2012	0.800	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DTE C - DT Test and Evaluation Support	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	2.796	Jun 2012	0.585	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** SSI NBCRS - OTHT S - Chemical Biological Prototype Evaluation	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.565	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
OTHT S - Low Volatile Sensor Evaluation	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	1.400	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
OTHT S - Low Volatile Sensor Support	MIPR	Battelle Memorial Institute:Aberdeen, MD	0.000	0.879	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
OTHT S - Low Volatile Sensor Support #2	MIPR	Various:	0.000	1.242	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			5.087	19.643		10.221		7.310		0.000		7.310			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CBRN DRS - PM/MS-S - Program Management and System Engineering Support	MIPR	Various:	0.000	2.049	Dec 2011	1.950	Dec 2012	0.720	Dec 2013	-		0.720	Continuing	Continuing	0.000
PM/MS S - Emerging Threat Enhancements Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	0.000	0.600	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Integrated Product Team	MIPR	Various:	0.000	1.829	Dec 2011	1.750	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBPDS - PM/MS SB - Project Management and System Engineering Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	5.566	1.043	Mar 2012	0.148	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JBTDS - PM/MS SB - Program Management and System Engineering Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	0.000		2.823	Mar 2013	2.799	Dec 2013	-		2.799	Continuing	Continuing	0.000
** NTA DEFENSE - PM/MS S - Program Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.140	Mar 2014	-		1.140	Continuing	Continuing	0.000
** NTA DETECT - PM/MS S - Program Management support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	6.441	1.049	Mar 2012	1.055	Mar 2013	0.080	Mar 2014	-		0.080	Continuing	Continuing	0.000
** SSI NBCRS - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA):Aberdeen Proving Ground, MD	0.000	3.516	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			12.007	10.086		7.726		4.739		0.000		4.739			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	25.758	52.854	33.018	36.766	0.000	36.766			0.000

**Remarks**



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
JBTDS - SDD Contract Award																												
JBTDS - PDR																												
JBTDS - DT 1																												
JBTDS - CDR																												
JBTDS - DT 2																												
JBTDS - Milestone C																												
JBTDS - PQT																												
** NTA DEFENSE - Threat Understanding																												
NTA DEFENSE - Systems Engineering																												
NTA DEFENSE - Test and Evaluation																												
NTA DEFENSE - Trail Boss/Technology Assessments																												
** NTA DETECT - COTS/GOTS Capability Shortfall Closure																												
NTA DETECT - System Engineering																												
NTA DETECT - Environmental Monitor DT/LOE																												
NTA DETECT - Equipment Set DT/OA																												
NTA DETECT - Field Deployable Mass Spec DT/OA																												
NTA DETECT - Field Deployable Mass Spec Integration																												
** SSI NBCRS - Low Volatile Prototype Sensor Technology Evaluation																												
SSI NBCRS - CB Prototype Sensor Technology Evaluation																												
SSI NBCRS - Sensor Transition to NGCD																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CBRN DRS - Component Developmental Test	1	2012	3	2012
CBRN DRS - SDD Phase	1	2012	1	2013
CBRN DRS - System Developmental Test	1	2012	2	2012
CBRN DRS - Operational Assessment	2	2012	3	2012
CBRN DRS - Milestone (MS) C LRIP	2	2013	2	2013
CBRN DRS - LRIP	2	2013	1	2014
CBRN DRS - Production Qualification Test	2	2013	3	2013
CBRN DRS - MOT&E	3	2013	4	2013
CBRN DRS - FRP/Deployment	2	2014	4	2018
CBRN DRS - Emerging Threat Component/System DT	1	2012	1	2012
CBRN DRS - Emerging Threat Component/System OT	1	2012	2	2012
CBRN DRS - Emerging Threat Component/System IOC	2	2012	2	2012
CBRN DRS - Emerging Threat COTS/GOTS Domestic Response Capability Set Fieldings	4	2012	1	2015
** JBPDS - Tech Refresh - Development and Integration	1	2012	4	2013
JBPDS - LRIP Decision	2	2014	2	2014
JBPDS - Production Decision	2	2015	2	2015
** JBTDS - Competitive Prototyping Testing	1	2012	1	2013
JBTDS - Capability Development Document	2	2013	3	2013
JBTDS - TEMP	3	2013	3	2013
JBTDS - MS B Decision	3	2013	3	2013
JBTDS - SDD Contract Award	1	2014	1	2014



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JBTDS - PDR	2	2014	2	2014
JBTDS - DT 1	2	2014	3	2015
JBTDS - CDR	4	2014	4	2014
JBTDS - DT 2	1	2016	3	2016
JBTDS - Milestone C	3	2017	3	2017
JBTDS - PQT	4	2017	3	2018
** NTA DEFENSE - Threat Understanding	1	2014	4	2016
NTA DEFENSE - Systems Engineering	1	2014	4	2016
NTA DEFENSE - Test and Evaluation	1	2014	4	2017
NTA DEFENSE - Trail Boss/Technology Assessments	1	2014	4	2018
** NTA DETECT - COTS/GOTS Capability Shortfall Closure	1	2012	3	2013
NTA DETECT - System Engineering	1	2012	4	2013
NTA DETECT - Environmental Monitor DT/LOE	1	2012	3	2014
NTA DETECT - Equipment Set DT/OA	1	2012	1	2012
NTA DETECT - Field Deployable Mass Spec DT/OA	1	2012	2	2012
NTA DETECT - Field Deployable Mass Spec Integration	2	2012	2	2015
** SSI NBCRS - Low Volatile Prototype Sensor Technology Evaluation	2	2012	1	2013
SSI NBCRS - CB Prototype Sensor Technology Evaluation	2	2012	3	2013
SSI NBCRS - Sensor Transition to NGCD	2	2012	3	2013

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CM5: <i>HOMELAND DEFENSE (EMD)</i>	-	8.984	9.952	18.533	-	18.533	1.600	0.000	0.000	0.000	0.000	39.069
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP) for programs that provide 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 system under development will incorporate an open architecture that provides enhanced scalability and tailorability to emerging mission requirements. It also provides the ability to rapidly develop a common operating picture allowing first responders and DoD officials to determine the appropriate course of action. 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), Biological Warfare Agents (BWAs), Lower Explosive Limits (LEL), and radioactive particles in all samples. 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 Marines.

The Special Purpose Units Chemical Biological Equipment program provides for the acquisition and ongoing assessment of Chemical, Biological, Radiological and Nuclear (CBRN) detection, protection and decontamination equipment for these units.

The Weapons of Mass Destruction Civil Support Team Program supports the ongoing assessment and acquisition of COTS and GOTS hand held analytical detection, protection, decontamination and sampling equipment for survey in order to expand/enhance the operational capabilities of the (57) WMD CST Teams. This includes modernization of detection capabilities inside the Analytical Laboratory System to maintain system viability until the CALs is fielded.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Title:</b> 1) CALS - System Engineering and Program Management</p> <p><b>Description:</b> 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/program, 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><b>FY 2013 Plans:</b> Continue System and Program Management Support at the initiation of the Engineering Manufacturing and Development Phase, provide management and engineering support, System Integration Laboratory Efforts in preparation of Critical Design Review, Manufacture of Prototypes, and testing.</p> <p><b>FY 2014 Plans:</b> Continue System and Program Management Support to provide management and engineering support, System Integration Laboratory Efforts in preparation of Critical Design Review, Manufacture of Prototypes, and testing.</p>		0.000	2.550	3.960
<p><b>Title:</b> 2) CALS - Production Engineering and Planning</p> <p><b>Description:</b> Efforts to ensure the producibility of the developmental material system, item, or component. Involves engineering task necessary to ensure timely, efficient, and economic production of essential materiel and is primarily of a planning nature. Includes efforts related to development of quality assurance (QA) plans, and special production processes to assess producibility.</p> <p><b>FY 2013 Plans:</b> Prepare Quality Assurance plans for system level development and conduct logistics analysis.</p>		0.000	0.573	0.000
<p><b>Title:</b> 3) CALS - Development Tooling</p> <p><b>Description:</b> Planning, design, assembly, installation, and rework of all tools, inspection equipment, and test equipment supporting the development of each system level prototype.</p> <p><b>FY 2013 Plans:</b> Conduct and complete planning and preparation of tools, equipment, platforms, materials required to fabricate, and integrate a complete set of CALS modules for test and evaluation.</p>		0.000	1.557	0.000
<p><b>Title:</b> 4) CALS - System Integration Laboratory</p> <p><b>Description:</b> Establishment of a System Integration laboratory to assist in the mitigation of programmatic risk and to facilitate the evaluation and integration of subsystem CBRN modules into System level prototypes.</p>		0.000	0.245	0.375

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>
<b>FY 2013 Plans:</b> Mitigate program risk through the use of a system integration laboratory tool set designed to facilitate system and subsystem level integration.			
<b>FY 2014 Plans:</b> Continue to mitigate program risk through the use of a system integration laboratory tool set designed to facilitate system and subsystem level integration.			
<b>Title:</b> 5) CALS - Subsystem (Module) Prototype Manufacturing <b>Description:</b> Development of Subsystem (Module) prototypes ensuring integration and connectivity between modules as a general system layout. This includes raw and semi-fabricated material plus purchased 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 subsystem prototype (Module). <b>FY 2014 Plans:</b> Initiate and complete manufacture of subsystem module.		0.000	0.000
		0.000	0.966
<b>Title:</b> 6) CALS - Subsystem Module Test and Evaluation <b>Description:</b> Subsystem related activities to include detailed planning, conduct, support, data reduction, and reports from such testing. <b>FY 2014 Plans:</b> Conduct subsystem module level testing.		0.000	0.000
		0.000	2.179
<b>Title:</b> 7) CALS - System Level Prototype Variants <b>Description:</b> Development of System Level variant prototypes ensuring integration and connectivity between modules as a general system layout. This includes raw and semi-fabricated material plus purchased 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). <b>FY 2014 Plans:</b> Initiate development and manufacture of CALS system variant prototypes (Five prototypes - \$1.714 million per system).		0.000	0.000
		0.000	8.568
<b>Title:</b> 8) SPU CBE		0.000	0.000
		0.000	2.485

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Description:</b> Acquisition and ongoing assessment of Chemical, Biological, Radiological and Nuclear (CBRN) detection, protection and decontamination equipment in support of the Special Purpose Units Chemical Biological Equipment (SPU CBE).</p> <p><b>FY 2014 Plans:</b> Provides for CBRN Counter-Terrorism Commercial Off-The-Shelf (COTS) product/technology integration in support of the Special Operations (SOF) Community.</p>				
<p><b>Title:</b> 9) WMD CST - System Engineering and Program Management</p> <p><b>Description:</b> 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><b>FY 2012 Accomplishments:</b> Provided for system engineering, technical control, and business management support of the next generation biological detection system.</p> <p><b>FY 2013 Plans:</b> Continues to provide for system engineering, technical control, and business management support of the next generation biological detection system.</p>		1.653	1.466	0.000
<p><b>Title:</b> 10) WMD CST - Development Engineering</p> <p><b>Description:</b> Includes the costs of study, analysis, design development, evaluation testing, and redesign for the system components(s) during system development efforts. Includes the design efforts of preparing specifications, establishment of reliability, maintainability, and quality assurance control requirements. Also includes the engineering efforts in support of preplanned product improvements and development costs for any neutralization process designed to change the physical, chemical, biological character or composition of hazardous waste produced by the system.</p> <p><b>FY 2012 Accomplishments:</b> Initiated development of method protocols for sampling with the next generation biological detection system for integration into the Analytical Laboratory System.</p> <p><b>FY 2013 Plans:</b></p>		1.260	0.958	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Complete development of method protocols for sampling with the next generation biological detection system for integration into the Analytical Laboratory System.			
<b>Title:</b> 11) WMD CST - Component Test and Evaluation (ALS) <b>Description:</b> 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. <b>FY 2012 Accomplishments:</b> Conducted Component Test and evaluation as a part of the modernization strategy for CBRN COTS technologies. <b>FY 2013 Plans:</b> Continue Component Test and evaluation as a part of the modernization strategy for CBRN COTS technologies.	5.785	1.265	0.000
<b>Title:</b> 12) WMD CST - Component Integration and Test (ALS) <b>Description:</b> Integration of component and test to ensure viable integration and connectivity of the component as a part of the general system layout. This includes raw and semi-fabricated material plus purchased parts materials, fabrication, processing, subassembly, final assembly, reworking modification, and installation of parts and equipment, power plants, electronic equipment and instrumentation for the specified component as well as evaluation. <b>FY 2012 Accomplishments:</b> Initiated integration of component detection system into the Analytical Laboratory System and validate connectivity of the component as a part of the general system. <b>FY 2013 Plans:</b> Complete integration of component detection system into the Analytical Laboratory System and validate connectivity of the component as a part of the general system.	0.286	1.338	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	8.984	9.952	18.533

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• JS0004: <i>WMD - CIVIL SUPPORT TEAMS (WMD CST)</i>	15.065	24.025	13.314		13.314	11.657	13.282	13.306	6.027	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• JS0005: <i>COMMON ANALYTICAL LABORATORY SYSTEM (CALs)</i>	0.000	0.000	0.957		0.957	34.991	54.411	64.946	33.008	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

CALS

The Common Analytical Laboratory System (CALs) will follow an incremental approach designed to address known joint force capability requirements for Chemical, Biological, Radiological and Nuclear (CBRN) detection which includes Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs), Chemical Warfare Agents (CWAs), Biological Warfare Agents (BWAs). CALs will address situational awareness by leveraging efforts underway with Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) to the extent possible. CALs will accommodate these component requirements within a modular and scalable concept framework.

SPU CBE

Address legacy requirements gaps/deficiencies for 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.

WMD CST

The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the ongoing system engineering assessment, validation, and modernization of both CBRN COTS and GOTS analytical detection, protection, decontamination and sampling capabilities fielded to the (57) WMD CST Teams in order to optimize/enhance their operational capabilities.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - HW SB - CALS Developmental Tooling	C/FPIF	TBD:	0.000	0.000		1.557	Jun 2013	0.000		-		0.000	0.000	1.557	0.000
HW S - CALS Production Engineering and Planning	C/FPIF	TBD:	0.000	0.000		0.573	Jun 2013	0.000		-		0.000	0.000	0.573	0.000
HW SB - CALS Subsystem Prototype Manufacturing	C/FPIF	TBD:	0.000	0.000		0.000		0.966	Dec 2013	-		0.966	0.000	0.966	0.000
HW S - CALS Prototype System Manufacturing	C/FPIF	TBD:	0.000	0.000		0.000		8.568	Mar 2014	-		8.568	0.000	8.568	0.000
** SPU CBE - HW S - CBRN Counter-Terrorism COTS	C/FP	TBD:	0.000	0.000		0.000		2.485	Jan 2014	-		2.485	0.000	2.485	0.000
** WMD CST - SW SB - Next Generation Bio Detection - Integration (ALS)	C/CPIF	Battelle Memorial Institute:Aberdeen, MD	0.000	0.862	Sep 2012	0.958	Mar 2013	0.000		-		0.000	0.000	1.820	0.000
SW SB - Method Protocol Development (ALS)	C/CPIF	Battelle Memorial Institute:Aberdeen, MD	0.000	0.398	Sep 2012	0.000		0.000		-		0.000	0.000	0.398	0.000
<b>Subtotal</b>			0.000	1.260		3.088		12.019		0.000		12.019	0.000	16.367	0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - ES S - CALS - Engineering Support System	C/FFP	Various:	0.000	0.000		1.657	Mar 2013	2.574	Mar 2014	-		2.574	0.000	4.231	0.000
ES S - CALS - System Integration Laboratory Support	MIPR	Various:	0.000	0.000		0.245	Mar 2013	0.375	Mar 2014	-		0.375	0.000	0.620	0.000
** WMD CST - ES S - Next Generation Bio Detection - Support	MIPR	Edgewood Chemical Biological Center	0.000	0.478	Mar 2012	0.438	Mar 2013	0.000		-		0.000	0.000	0.916	0.000



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		(ECBC):Aberdeen Proving Ground, MD													
ES C - CBRN COTS Equipment	C/FP	Camber Corp.:Huntsville, AL	0.000	0.608	Jun 2012	0.539	Mar 2013	0.000		-		0.000	0.000	1.147	0.000
<b>Subtotal</b>			0.000	1.086		2.879		2.949		0.000		2.949	0.000	6.914	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - DTE SB - CALS Subsystem Prototype	C/CPIF	TBD:	0.000	0.000		0.000		2.179	Mar 2014	-		2.179	0.000	2.179	0.000
** WMD CST - OTHT SB - Next Generation Bio Detection Component Testing (ALS)	C/CPIF	Battelle Memorial Institute:Aberdeen, MD	0.000	3.819	Sep 2012	0.000		0.000		-		0.000	0.000	3.819	0.000
OTHT SB - Component Integration Testing (ALS)	C/CPIF	Battelle Memorial Institute:Aberdeen, MD	0.000	0.286	Sep 2012	1.338	Mar 2013	0.000		-		0.000	0.000	1.624	0.000
OTHT C - CBRN Component Testing	C/CPIF	Battelle Memorial Institute:Aberdeen, MD	0.000	1.965	Jun 2012	1.265	Jun 2013	0.000		-		0.000	0.000	3.230	0.000
<b>Subtotal</b>			0.000	6.070		2.603		2.179		0.000		2.179	0.000	10.852	0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CALS - PM/MS HW - CALS Program Office - Planning and Programming	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.893	Mar 2013	1.386	Mar 2014	-		1.386	0.000	2.279	0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - CALS Preliminary Design Review					■																							
CALS - CALS Milestone B							■																					
CALS - CALS Critical Design Review							■																					
CALS - CALS Prototype Module Development and Fabrication							■	■																				
CALS - CALS Milestone C											■																	
CALS - CALS Full Rate Production													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
** SPU CBE - SPU CBE Tech Integration											■	■	■	■	■	■												
** WMD CST - Protocol Development - CBRN Modernization ALS				■	■	■	■	■																				
WMD CST - Component Level Testing - CBRN Modernization ALS				■	■	■	■	■																				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CM5: <i>HOMELAND DEFENSE (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CALS - CALS Preliminary Design Review	2	2013	2	2013
CALS - CALS Milestone B	3	2013	3	2013
CALS - CALS Critical Design Review	3	2013	3	2013
CALS - CALS Prototype Module Development and Fabrication	3	2013	4	2013
CALS - CALS Milestone C	4	2014	4	2014
CALS - CALS Full Rate Production	3	2015	4	2018
** SPU CBE - SPU CBE Tech Integration	2	2014	2	2015
** WMD CST - Protocol Development - CBRN Modernization ALS	4	2012	2	2013
WMD CST - Component Level Testing - CBRN Modernization ALS	4	2012	2	2013

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CO5: <i>COLLECTIVE PROTECTION (EMD)</i>	-	12.451	10.642	13.300	-	13.300	2.600	0.000	0.000	0.000	0.000	38.993
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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.

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 2012	FY 2013	FY 2014
<b>Title:</b> 1) JECP - System Development and Demonstration (SDD) Contract	1.659	4.234	2.216
<b>Description:</b> System Development and Demonstration (SDD) Contract to design, develop, integrate and test the prototype Joint Expeditionary Collective Protection (JECP) Family of Systems (FoS) that meet the requirements of the Capability Development Document (CDD) and System Performance Specification (SPS).			
<b>FY 2012 Accomplishments:</b> Continued providing support for Government system level Development Testing (DT) with combined Operational and DT field events, logistics/manpower and personnel integration (MANPRINT) demonstration, and operational assessment (OA). Conducted			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>System Verification Review, Functional Configuration Audit and Production Readiness Review. Continued development of logistic products for the Family of Systems (FoS). Conducted Technical Manual Validation.</p> <p><b>FY 2013 Plans:</b> Continue development of logistic products. Support Milestone C decision review. Incorporate changes into the FoS design to address any failures from DT or observations from the OA. Begin the manufacture of Low Rate Initial Production (LRIP) systems for Government operational test and evaluation and manufacturing readiness evaluation. LRIP consists of 5 tent kits at approximately \$35,000 each, 9 structure kit improved at approximately \$26,000 each, 6 SA large at approximately \$150,000 each, 9 single person airlocks at approximately \$9,000 each, and 9 multi-person airlocks at approximately \$25,000 each. Estimated total FY13 cost of LRIP systems is \$1.724 million.</p> <p><b>FY 2014 Plans:</b> Continue manufacture of additional LRIP systems, 5 tent kits at approximately \$35,000 each, 7 structure kit unimproved at approximately \$38,000 each, 5 SA large at approximately \$150,000 each, 5 single person airlocks at approximately \$9,000 each, and 7 multi-person airlocks at approximately \$25,000 each. Estimated total FY14 cost of LRIP systems is \$1.331 million. Participate in a Logistics Maintenance Demonstration (LMD). Finalize logistic products for the Family of Systems and support the final Joint Integrated Logistics Assessment. Support FoS Technical Manual Verification and Provisioning Conference. Provide support to Government led production verification test and multi-service operational test and evaluation.</p>				
<p><b>Title:</b> 2) JECP - Government System Level Developmental Testing</p> <p><b>Description:</b> Conduct Government system level Developmental Testing (DT) of the Family of Systems (FoS) to be conducted both in the chamber and in the field (littoral and desert environments). Conduct Operational Assessment (OA). Develop system level empirical models to provide to the JECP System Performance Model (SPM).</p> <p><b>FY 2012 Accomplishments:</b> Completed Non-CB mode DT of the Family of Systems (FoS). Began Reliability, Availability, and Maintainability (RAM) Analysis from data collected throughout DT. Completed static and dynamic Collective Protection system verification testing on the FoS. Conducted DT system field challenge, 30 day continuous operations verification testing, OA, and post field static system verification testing. Began post field Government component level DT consisting of barrier materials swatch testing, and air-purification component testing.</p> <p><b>FY 2013 Plans:</b></p>		5.003	1.640	4.991

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Complete post field Government component level DT to include barrier material swatch testing and passive air-purification component testing. Begin regression testing on any design changes resulting from failures during DT or observations from the OA. Conduct detailed planning for production verification testing on low rate initial production FoS.</p> <p><b>FY 2014 Plans:</b> Complete regression testing on any design changes resulting from failures during DT or observations from the OA. Conduct production verification testing, including a RAM event, on low rate initial production FoS.</p>				
<p><b>Title:</b> 3) JECF - Multi-Service Operational Test &amp; Evaluation</p> <p><b>Description:</b> Conduct Government system level Operational Testing (OT) of the Family of Systems (FoS) to be conducted in the field (littoral and desert environments).</p> <p><b>FY 2013 Plans:</b> Begin high level planning for Multi-service Operational Test &amp; Evaluation (MOT&amp;E) of Low Rate Initial Production units.</p> <p><b>FY 2014 Plans:</b> Complete detailed planning for MOT&amp;E of Low Rate Initial Production units.</p>		0.000	0.100	0.250
<p><b>Title:</b> 4) JECF - Systems Engineering IPT</p> <p><b>Description:</b> Provide technical direction to the Contractor team. Establish and maintain a robust and disciplined Systems Engineering process IAW Department of Defense (DoD) and Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) policy and guidance.</p> <p><b>FY 2012 Accomplishments:</b> Developed, updated and/or reviewed program documentation in preparation for MS C. Provided support for Government system level DT. Ensured FoS ready for and participated in System Verification Review, Functional Configuration Audit and Production Readiness Review. Updated and maintained the Requirements Traceability Matrix (RTM) to track when requirements have been verified as test results become available. Coordinated with JRO to assist in development of the Capability Production Document based on system level testing and trades analysis. Worked with the contractor to identify corrective action for any test failures.</p> <p><b>FY 2013 Plans:</b> Update and maintain the RTM to track when requirements have been verified as test results become available. Conduct a System Verification Review, Functional Configuration Audit and a Production Readiness Review. Establish the LRIP product baseline. Participate in Configuration Control Board.</p> <p><b>FY 2014 Plans:</b></p>		1.062	1.048	0.750

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Provide support for Government led production verification test and MOT&E. Update and maintain the RTM to track when requirements have been verified as test results become available. Participate in Configuration Control Board.				
<p><b>Title:</b> 5) JECF - Test and Evaluation IPT</p> <p><b>Description:</b> Lead and oversee all aspects of the JECF Integrated Test (IT) program.</p> <p><b>FY 2012 Accomplishments:</b> Participated in Government system level DT and Technical Manual validation. Reviewed and assessed results from component and system level DT and provided to users for incorporation into the Capability Production Document. Ensured FoS ready for and participate in System Verification Review, Functional Configuration Audit and Production Readiness Review. Developed, updated and/or reviewed program documentation in preparation for MS C.</p> <p><b>FY 2013 Plans:</b> Complete participation in Government lead system level DT and operational assessment. Conduct test failure scoring conferences as necessary. Authenticate data collected during DT. Perform analysis to support test report generation and determination of requirements compliance.</p> <p><b>FY 2014 Plans:</b> Conduct Government led system level DT using LRIP systems and participate in MOT&amp;E. Conduct test failure scoring conferences as necessary.</p>		0.871	1.250	0.750
<p><b>Title:</b> 6) JECF - Integrated Logistics Support IPT</p> <p><b>Description:</b> Oversee and provide supportability planning guidance to the SDD contractor in addressing logistic support elements including maintenance philosophy, manpower and personnel, supply support, Tech Data, support and test equipment, training and training support.</p> <p><b>FY 2012 Accomplishments:</b> Developed, updated and/or reviewed program documentation in preparation for MS C. Provide support for Government system level DT. Reviewed Technical Manuals and witnessed validation. Ensured FoS ready for and participated in System Verification Review, Functional Configuration Audit and Production Readiness Review. Provided information to support the Joint Independent Logistics Assessment (JILA). Continued the Business Case Analysis to determine the best approach for logistic support and sustainment. Participated in Configuration Control Board as necessary. Provided information to support the JILA.</p> <p><b>FY 2013 Plans:</b></p>		0.808	1.219	0.750



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Report out at MS C the results of the BCA and surge requirements analysis. Review updated Technical Manuals and Training material. Participate in Configuration Control Board as necessary. Provide information to support the JILA. <b>FY 2014 Plans:</b> Conduct a logistics maintenance demonstration on the FoS using Warfighters from the services. Conduct a Provisioning Conference and Technical Manual Verification. Provide information to support the final JILA.				
<b>Title:</b> 7) JECF - Program Management and Contract Administration <b>Description:</b> Oversee the day-to-day program execution including guidance and direction to the JECF Integrated Product Teams (IPTs), financial management and tracking, budget preparation, schedule planning and monitoring, and reporting requirements including but not limited to weekly highlight reports, monthly acquisition status reports and quarterly program review briefs. Perform SDD contract management and administration. <b>FY 2012 Accomplishments:</b> Focused on technical manual development and validation, Government system level DT and OA. Begin planning and preparation for MS C. <b>FY 2013 Plans:</b> Complete an LRIP MS C decision. Exercise option in contract for low rate initial production (LRIP). Focus on system verification review, functional configuration audit and production readiness reviews, manufacture of LRIP systems and preparation for Production Verification Test (PVT) and MOT&E. <b>FY 2014 Plans:</b> Focus on conduct of PVT and detailed planning for MOT&E. Begin preparation for FRP decision.		0.673	0.917	0.900
<b>Title:</b> 8) JECF - Program Management <b>FY 2012 Accomplishments:</b> Provided strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2013 Plans:</b> Provide strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2014 Plans:</b>		2.375	0.234	2.693

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Provide strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.			
<b>Accomplishments/Planned Programs Subtotals</b>	12.451	10.642	13.300

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• JP1111: <i>JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)</i>	0.000	0.000	4.055		4.055	10.160	7.200	11.700	11.700	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

JECP

Strategy based on evolutionary development, based on a family of systems approach. Following MS B, a Statement of Work (SOW) and System Performance Specification (SPS) were used to award competitive cost plus incentive fee contract to build prototypes that are being subjected to robust engineering developmental testing and Operational Assessment during the System Development and Demonstration (SDD) phase. Following MS C, award a Fixed Price Incentive Successive Target (FPIS) option for Low Rate Initial Production (LRIP) to support formal Developmental Testing (DT) and Multi-Service Operational Test & Evaluation (MOT&E) with the intent to field Low Rate Initial Production (LRIP) systems developed using procurement funds. Following a successful Full Rate Production (FRP) decision, award a Fixed Price Incentive-Successive targets (FPIS) option with five one-year ordering periods. Full and open competition will be used with an updated SPS to award follow-on production contracts.

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JECF - HW S - Prototype Development	C/CPIF	Science Applications International Corporation (SAIC):Abingdon, MD	4.542	1.659	Mar 2012	0.000		0.000		-		0.000	0.000	6.201	0.000
HW S - Production Representative System	C/CPIF	Science Applications International Corporation (SAIC):Abingdon, MD	0.000	0.000		4.234	Mar 2013	0.404	Mar 2014	-		0.404	0.000	4.638	0.000
<b>Subtotal</b>			4.542	1.659		4.234		0.404		0.000		0.404	0.000	10.839	0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JECF - ES S - Systems Engineering IPT	MIPR	Various:	3.011	1.062	Dec 2011	1.048	Dec 2012	0.750	Dec 2013	-		0.750	0.000	5.871	0.000
ILS S - Integrated Logistics IPT	MIPR	Various:	1.346	0.808	Dec 2011	1.219	Dec 2012	0.750	Dec 2013	-		0.750	0.000	4.123	0.000
<b>Subtotal</b>			4.357	1.870		2.267		1.500		0.000		1.500	0.000	9.994	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JECF - OTHB SB - Test & Evaluation IPT	MIPR	Various:	3.171	0.871	Dec 2011	1.250	Dec 2012	0.750	Dec 2013	-		0.750	0.000	6.042	0.000
DTE S - Prototype Production Qualification Testing	MIPR	Various:	0.000	1.052	Mar 2012	0.000		0.000		-		0.000	0.000	1.052	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DTE S - Prototype Production Qualification Testing #2	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	2.901	Dec 2011	0.000		0.000		-		0.000	0.000	2.901	0.000
DTE S - Prototype Production Qualification Testing #3	MIPR	Test Management Group:Elgin AFB, FL	0.000	1.050	Dec 2011	0.000		0.000		-		0.000	0.000	1.050	0.000
DTE S - Low Rate Initial Production Units Production Verification Testing	MIPR	Various:	0.000	0.000		1.640	Mar 2013	4.991	Mar 2014	-		4.991	0.000	6.631	0.000
OTE S - Low Rate Initial Production Multi-Service Operational Testing	MIPR	Various:	0.000	0.000		0.100	Dec 2012	2.062	Dec 2013	-		2.062	0.000	2.162	0.000
<b>Subtotal</b>			3.171	5.874		2.990		7.803		0.000		7.803	0.000	19.838	0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JECPC - PM/MS S - APMO Support	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center:Dahlgren, VA	3.130	0.532	Dec 2011	0.667	Dec 2012	0.600	Dec 2013	-		0.600	0.000	4.929	0.000
PM/MS S - APMO Contractor Support	C/FP	Solutions Development Corp.:Dahlgren, VA	4.945	0.141	Mar 2012	0.250	Mar 2013	0.300	Mar 2014	-		0.300	0.000	5.636	0.000
PM/MS S - Program Management Support	MIPR	Various:	1.259	2.375	Dec 2011	0.234	Dec 2012	2.693	Dec 2013	-		2.693	0.000	6.561	0.000
<b>Subtotal</b>			9.334	3.048		1.151		3.593		0.000		3.593	0.000	17.126	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	21.404	12.451	10.642	13.300	0.000	13.300	0.000	57.797	0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
** JEC - Performance Specification Testing (PST)	■																											
JEC - Production Qualification Testing (PQT)	■	■	■	■	■	■	■	■																				
JEC - Operational Assessment (OA)				■																								
JEC - Capability Production Document (CPD)							■	■																				
JEC - Milestone C Decision							■	■																				
JEC - Low-Rate Initial Production Contract Option							■	■																				
JEC - Production Verification Testing (PVT)									■	■	■	■	■	■	■	■												
JEC - Multi-service Operational Test and Evaluation													■	■	■	■												
JEC - Full Rate Production Decision Review													■	■	■	■												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> CO5: <i>COLLECTIVE PROTECTION (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JECF - Performance Specification Testing (PST)	1	2012	1	2012
JECF - Production Qualification Testing (PQT)	1	2012	1	2013
JECF - Operational Assessment (OA)	4	2012	4	2012
JECF - Capability Production Document (CPD)	2	2013	2	2013
JECF - Milestone C Decision	2	2013	2	2013
JECF - Low-Rate Initial Production Contract Option	2	2013	2	2013
JECF - Production Verification Testing (PVT)	2	2014	1	2015
JECF - Multi-service Operational Test and Evaluation	2	2015	3	2015
JECF - Full Rate Production Decision Review	1	2015	1	2015

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>	-	0.000	9.324	2.412	-	2.412	8.506	17.961	17.417	31.827	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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); and (3) Joint Sensitive Equipment Wipe (JSEW).

The Contaminated Human Remains Pouch (CHRP) effort will provide the capability to protect personnel handling and processing human remains contaminated with Chemical, Biological, Radiological, or Nuclear (CBRN) contamination. 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 contaminated human remains (CHR) during recovery and transport from the point of fatality to the Mortuary Affairs (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, to include equipment, to improve decontamination processes, and decontaminant solutions to meet the capability gaps for decontaminating NTA and chemical and biological warfare agents from personnel, equipment, vehicle interiors/exterior, terrain, and fixed facilities.

JSEW will provide immediate/operational decontamination capabilities for sensitive equipment in hostile and non-hostile environments that have been exposed to chemical agents/contamination. The JSEW will decrease the level of gross chemical agent contamination from 10 g/m<sup>2</sup> to less than or equal to 1 g/m<sup>2</sup> in support of thorough decontamination on sensitive equipment. In addition, the JSEW program will investigate the potential for non-traditional agent (NTA) compatibility of JSEW prototypes.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) CHRP	0.000	1.773	1.412
<b>FY 2013 Plans:</b>			



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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiate engineering, testing, and logistics planning and documentation to support Contaminated Human Remains Pouch (CHRP) test and evaluation to include liquid and vapor live agent swatch, system permeation, durability, material compatibility, environmental effects, and Operational Testing (OT).  <b>FY 2014 Plans:</b> Complete OT and reporting to support Capabilities Production Document (CPD). Finalize documentation and complete final technical reviews to support a MS C FRP decision.			
<b>Title:</b> 2) CHRP  <b>FY 2013 Plans:</b> Award contract(s) to procure 80 CHRP systems (at \$2,000 each) for Developmental Testing (DT) and Multi-Service Operational Test and Evaluation (MOT&E).	0.000	0.160	0.000
<b>Title:</b> 3) DFoS  <b>FY 2013 Plans:</b> Validate the decontamination wipes, the selected chemical decontaminant(s) with a decontaminant delivery system, the decontamination assurance spray with the selected decontaminant(s), and Reactive Skin Decontamination Lotion (RSDL) through evaluations such as full scale use of the systems, interference and compatibility testing.	0.000	7.391	0.000
<b>Title:</b> 4) DFoS - JSEW  <b>FY 2014 Plans:</b> Purchase 3,000 JSEW test assets (at \$17 each) for advanced DT and development of programmatic documentation.	0.000	0.000	0.350
<b>Title:</b> 5) DFoS - JSEW  <b>FY 2014 Plans:</b> Complete Developmental Testing (DT) to include Packaging/MIL-STD 810G, real-time shelf-life, Product Verification Testing (PVT), and Multi-Service Operational Test and Evaluation (MOT&E).	0.000	0.000	0.650
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	9.324	2.412

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• JD0050: <i>DECONTAMINATION FAMILY OF SYSTEMS (DFoS)</i>	0.000	0.506	0.000		0.000	4.450	9.754	16.337	28.356	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• JD0055: <i>JOINT SERVICE PERSONNEL/SKIN DECON SYSTEM (JSPDS)</i>	7.466	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	7.466
• JD0063: <i>CONTAMINATED HUMAN REMAINS POUCH (CHRP)</i>	0.000	0.000	0.000		0.000	1.553	1.542	1.114	0.000	0.000	4.209

**Remarks**

**D. Acquisition Strategy**

CHRP

The CHRP commercial items/Non-Developmental Items (NDI) acquisition strategy will leverage current Mortuary Affairs 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 verify that existing commercial items/NDIs meet performance specifications to provide a fielded capability for safe intra-theater handling and transport of CHR. Follow-on phases of CHRP development may include efforts to incorporate the CHRP into a system designed to provide a transport capability to return CHR to Continental United States (CONUS).

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. A multi-phased Analysis of Alternatives (AoA) is being conducted to identify and evaluate the operational effectiveness of potential material solutions to satisfy Service requirements. The first two efforts being evaluated under the AoA are Coatings and Dial-A-Decon. Both of these efforts will employ Competitive Prototyping (CP) to facilitate the identification and evaluation of technologies that can meet the Initial Capabilities Document (ICD) requirements. The JSEW program employs competitive prototyping to facilitate the evaluation of technologies. Candidates will be evaluated from competing vendor prototypes to determine optimal JSEW systems. The JSEW program will continue following an evolutionary acquisition strategy; employing a CP effort to facilitate the identification and evaluation of mature technologies that can meet the JSEW Capabilities Development Document (CDD) requirements. The GPD program employs competitive prototyping to facilitate the evaluation of technologies. Seven contracts were awarded for competing vendors to provide prototype GPDs. Candidates will be evaluated to determine optimal GPD systems to satisfy CBRN user needs. The CIDAS program employs competitive prototyping to facilitate the identification and evaluation of technologies. A request for proposal will solicit industry using a full and open competition best value contract strategy for technologies capable of meeting the CIDAS requirements. It is anticipated that multiple contracts will be awarded for competing vendors to provide CIDAS technologies for Technology Development activities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>

**E. Performance Metrics**

N/A

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CHRP - CHRP Contract	C/FFP	Various:	0.000	0.000		0.160	Mar 2013	0.032	Dec 2013	-		0.032	Continuing	Continuing	0.000
** DfOS JSEW - HW S - Joint Sensitive Equipment Wipe (JSEW)	C/FFP	TBD:	0.000	0.000		0.000		0.350	Jan 2014	-		0.350	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.160		0.382		0.000		0.382			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CHRP - IPT Technical Support	MIPR	Various:	0.000	0.000		0.150	Mar 2013	0.200	Mar 2014	-		0.200	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.150		0.200		0.000		0.200			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CHRP - Document Development and Test Planning	MIPR	Various:	0.000	0.000		0.150	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
Developmental Testing and Reporting	MIPR	Various:	0.000	0.000		0.624	May 2013	0.000		-		0.000	Continuing	Continuing	0.000
Operational Testing and Reporting	MIPR	Various:	0.000	0.000		0.400	Jun 2013	0.494	Dec 2013	-		0.494	Continuing	Continuing	0.000
** DfOS - DTE C - UNS NTA Decon Assurance Spray	MIPR	TBD:	0.000	0.000		1.746	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
DTE C - UNS NTA Reactive Skin Decontamination Lotion (RSDL)	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.000	0.000		1.200	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DTE C - UNS NTA Chemical Decon/Decon Wipes	MIPR	TBD:	0.000	0.000		2.745	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** DFoS JSEW - OTE S - Joint Sensitive Equipment Wipe (JSEW)	MIPR	TBD:	0.000	0.000		0.000		0.450	Mar 2014	-		0.450	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		6.865		0.944		0.000		0.944			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** CHRP - PM/MS S - Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	0.000	0.000		0.449	Mar 2013	0.686	Jan 2014	-		0.686	Continuing	Continuing	0.000
** DFoS - PM/MS SB - Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	0.265	0.000		1.700	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000
** DFoS JSEW - PM/MS S - Program Management, Integrated Product Team, and Technical Support	MIPR	TBD:	0.000	0.000		0.000		0.200	Oct 2013	-		0.200	Continuing	Continuing	0.000
<b>Subtotal</b>			0.265	0.000		2.149		0.886		0.000		0.886			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		0.265	0.000	9.324	2.412	0.000		2.412	0.000

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - RFP and Contract Activities			■																									
CHRP - Competitive Prototyping			■																									
CHRP - CDD			■																									
CHRP - TEMP (MS B)							■																					
CHRP - PDR							■																					
CHRP - MS B							■																					
CHRP - CDR								■																				
CHRP - DT								■																				
CHRP - OT											■																	
CHRP - CPD											■																	
CHRP - TEMP (MS C/FRP)											■																	
CHRP - MS C																												
CHRP - FRP																												
** DFoS - NTA Chemical Decon Downselect			■																									
DFoS - NTA Chemical Decon Coupon Efficacy, Material Compatibility and Detector Compatibility Testing			■																									
DFoS - NTA Chemical Decon Operational Assessment								■																				
DFoS - NTA Chemical Decon Capabilities and Limitations Memo								■																				
DFoS - NTA Decon Assurance Spray Operational Assessment								■																				
DFoS - NTA Decon Assurance Spray Capabilities and Limitations Memo								■																				

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 Decon Assurance Spray Interference and Compatibility testing																												
DFoS - Dial-A-Decon MS C																												
** DFoS JSEW - CPI testing																												
DFoS JSEW - System Requirements/Design Review																												
DFoS JSEW - CPII Testing																												
DFoS JSEW - CDD																												
DFoS JSEW - DT																												
DFoS JSEW - TEMP																												
DFoS JSEW - System Verification Review																												
DFoS JSEW - MS C/LRIP																												
DFoS JSEW - LRIP																												
DFoS JSEW - OT																												
DFoS JSEW - FRP																												
DFoS JSEW - IOC																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CHRP - RFP and Contract Activities	3	2012	3	2012
CHRP - Competitive Prototyping	3	2012	4	2012
CHRP - CDD	3	2012	4	2012
CHRP - TEMP (MS B)	1	2013	2	2013
CHRP - PDR	2	2013	2	2013
CHRP - MS B	2	2013	2	2013
CHRP - CDR	3	2013	3	2013
CHRP - DT	3	2013	3	2013
CHRP - OT	4	2013	1	2014
CHRP - CPD	1	2014	3	2014
CHRP - TEMP (MS C/FRP)	2	2014	3	2014
CHRP - MS C	4	2014	4	2014
CHRP - FRP	1	2015	4	2017
** DFoS - NTA Chemical Decon Downselect	2	2012	2	2012
DFoS - NTA Chemical Decon Coupon Efficacy, Material Compatibility and Detector Compatibility Testing	2	2012	2	2013
DFoS - NTA Chemical Decon Operational Assessment	2	2013	2	2013
DFoS - NTA Chemical Decon Capabilities and Limitations Memo	2	2013	3	2013
DFoS - NTA Decon Assurance Spray Operational Assessment	2	2013	2	2013
DFoS - NTA Decon Assurance Spray Capabilities and Limitations Memo	2	2013	3	2013
DFoS - NTA Decon Assurance Spray Interference and Compatibility testing	2	2013	2	2014
DFoS - Dial-A-Decon MS C	2	2018	2	2018



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
** DFoS JSEW - CPI testing	3	2012	1	2013
DFoS JSEW - System Requirements/Design Review	2	2013	2	2013
DFoS JSEW - CPII Testing	2	2013	1	2014
DFoS JSEW - CDD	4	2013	4	2013
DFoS JSEW - DT	4	2013	3	2014
DFoS JSEW - TEMP	2	2014	2	2014
DFoS JSEW - System Verification Review	2	2014	2	2014
DFoS JSEW - MS C/LRIP	4	2014	4	2014
DFoS JSEW - LRIP	4	2014	4	2014
DFoS JSEW - OT	4	2014	2	2015
DFoS JSEW - FRP	3	2015	3	2015
DFoS JSEW - IOC	3	2017	3	2017

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program										<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>				<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>			
<b>COST (\$ in Millions)</b>	<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013<sup>#</sup></b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO <sup>##</sup></b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	-	13.325	15.971	26.296	-	26.296	13.672	17.292	9.411	8.522	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project provides System Development and Demonstration (SDD) and Low Rate Initial Production (SDD/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.

Included in this program are:

(1) The Joint Service Aircrew Mask (JSAM) is an Acquisition Category (ACAT) III, incrementally developed Family of Systems (FoS) for respiratory protection. The JSAM MBU-25 (V)/P and Modified M53 (MM53) Fixed Wing (FW) respirators are being developed for use in the majority of Department of Defense fixed wing aircraft, and the JSAM MPU-5 Rotary Wing (RW) mask is being developed for use in the majority of Department of Defense RW aircraft, and the JSAM-JSF is a CB respirator that supports the Joint Strike Fighter (JSF) when integrated with aircraft and pilot mounted equipment, will provide combined CB, hypoxia and anti-Gravity (anti-G) protection to all F-35 users, including the United States Air Force (USAF), Navy (USN), Marine Corps (USMC), and International Partners. The goal of the overall JSAM project is to develop, manufacture, field and sustain an aircrew respirator system that, in conjunction with a below-the-neck (BTN) clothing ensemble, will provide the capability for all aircrew to fly throughout their full operating envelope in an actual or perceived Chemical and Biological (CB) warfare environment. The JSAM will be a lightweight CB protective mask that will be worn as CB protection for most Army, Air Force, Navy and Marine RW and FW aircrew members. The JSAM-FW MBU-25(V)/P will be the first and only CB protective mask in the DoD inventory that can provide anti-G protection, up to nine times the vertical force (Gz), for aircrew in high-performance aircraft. The JSAM-FW MM53 will be used in aircrew positions that do not require anti-G protection. The MM53 provides CB protection for positions that only need pressure breathing for altitude and has a much lower cost per unit than the MBU-25(V)/P. All JSAM variants will be compatible with most BTN CB ensembles and existing aircrew life support equipment. They will include a protective hood assembly, CB filter, blower assembly, and an intercom for ground communication. They will also provide flame and thermal protection, demist/emergency demist, and anti-drowning features. JSAM Phase II will provide CB respiratory and ocular protection to aircrew members for 75% of aircrew positions.

(2) The Joint Service General Purpose Mask (JSGPM) Advanced Respiratory Protection Initiative (ARPI): This project funds the advanced component development and prototypes of an improved filtration and protection capability against highest priority Toxic Industrial Chemical (TIC) threats, addressing a current and significant capability gap to the operating force. The effort is supported by the Capabilities Production Document for the JSGPM, which outlines the need for a robust TIC/TIM

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>

protection capability. It is expected that new capabilities demonstrated through the activities in this project will be leveraged and integrated into future increments of UIPE.

(3) The Uniform Integrated Protection Ensemble (UIPE). The objective of UIPE is to fully integrate chemical, biological, radiological, nuclear (CBRN) and toxic industrial material (TIM) protection 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 Increment 1 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. UIPE Increment 1 achieved MS B approval in November 2011 and is now in the Engineering and Manufacturing Development (EMD) phase. The first increment of UIPE will ultimately provide CB protective equipment with improved operational capability to the U.S. Special Operations Command.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) JSAM <b>FY 2012 Accomplishments:</b> JSAM MBU-25 (V)/P (FW) - Completed DT for F-22, MC-12W, F-18 and MV-22 aircraft platforms. Started operation testing (OT) for top four priority aircraft. Conducted logistics demonstration. JSAM MPU-5 (RW) - Completed Manufacturing Readiness Assessment. Finalized configuration for Multi-Service Operational Test and Evaluation (MOT&E). Completed definition of performance envelope. Completed logistics and training planning. Conducted developmental tests (DT)(e.g., chemical agent, simulant, environmental, and logistics tests) and developed reports. JSAM JSF - Design Verification Testing, Manufacturing Readiness Assessment, Critical Design Review Preparation and Program Management.	9.402	0.000	0.000
<b>Title:</b> 2) JSAM FW <b>FY 2013 Plans:</b> Complete Critical Design Reviews and begin Developmental Testing (DT) for MBU-25 and Modified M53 (MM53). <b>FY 2014 Plans:</b> Complete DT for MBU-25 and MM53 and begin Operational Testing (OT) for the MM53.	0.000	2.683	17.172
<b>Title:</b> 3) JSAM FW <b>FY 2013 Plans:</b> Award contracts to procure 75 MBU-25 test assets (at \$9,900 each) and 50 MM53 test assets (at \$1,200 each). <b>FY 2014 Plans:</b>	0.000	0.803	1.082

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Award contracts to procure 85 MBU-25 Low Rate Initial Production (LRIP) assets (at \$9,900 each) and 200 MM53 LRIP assets (at \$1,200 each).				
<b>Title:</b> 4) JSAM FW - JSF		0.000	2.000	0.000
<b>FY 2013 Plans:</b> Continue Design Verification Testing, Manufacturing Readiness Assessment, Critical Design Review preparation and program management.				
<b>Title:</b> 5) JSAM RW		0.000	6.612	6.037
<b>FY 2013 Plans:</b> Conduct airworthiness testing. Prepare assets for operational testing. Develop test plans. Conduct developmental tests (e.g., chemical agent, simulant, environmental, and logistics tests) and develop reports. Prepare milestone documentation. Conduct formal system reviews (i.e., System Verification Review and Production Readiness Review). Conduct training.				
<b>FY 2014 Plans:</b> Complete airworthiness testing and obtain airworthiness certifications. Initiate Multi-Service Operational Test and Evaluation (MOT&E). Conduct Performance Verification Testing (PVT) upon receipt of Low Rate Initial Production (LRIP) systems. Conduct technical reviews in preparation for/in advance of the Full Rate Production (FRP) Decision Milestone.				
<b>Title:</b> 6) JSGPM		0.000	2.004	2.005
<b>FY 2013 Plans:</b> JSGPM (ARPI) - Begin the SDD phase of ZZ-AT media (zirconium hydroxide) based filter transitioning from Tech Base that is applicable to replace or improve fielded protection. Prepare for SDD contract.				
<b>FY 2014 Plans:</b> JSGPM (M61 Filters) - Award task on M61 Filter contract for delivery of 700 pairs of filters with more robust TIC/CWA protection. Filters will be \$100 per pair for a total cost of \$70,000.				
<b>Title:</b> 7) UIPE		3.923	1.869	0.000
<b>FY 2012 Accomplishments:</b> UIPE Incr 1 - Prepared for, and conducted MS B decision. Entered Engineering & Manufacturing Development (EMD) phase. Awarded prototype contracts for 614 test articles at approx \$477 each. Conduct Critical Design Review (CDR) and EMD phase competitive prototyping. Initiate integrated developmental testing and operational testing (DT/OT). Assess down-selected UIPE				

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
candidates in field and laboratory test events to evaluate performance with respect to reduction of thermal burden, protection against CB agents, and mission suitability.  <b>FY 2013 Plans:</b> UIPE Incr 1 - Conduct Production Readiness Review (PRR), System Verification Review (SVR), Manufacturing Readiness Assessment (MRA) and Technology Readiness Assessment (TRA). Complete Logistics Demonstration. Perform Physical Configuration Audit (PCA). Prepare for, and conduct MS C Low Rate Initial Production (LRIP) decision. Exercise LRIP contract option(s). Conduct Operational Test Readiness Review (OTRR) and First Article Test (FAT). Initiate Operational Test and Evaluation (OT&E). Prepare for and conduct Full Rate Production (FRP) decision.			
<b>Accomplishments/Planned Programs Subtotals</b>	13.325	15.971	26.296

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• JI0002: <i>JS AIRCREW MASK (JSAM)</i>	7.341	14.878	10.552		10.552	11.526	31.500	54.050	68.924	Continuing	Continuing
• MA0401: <i>CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)</i>	0.000	10.376	13.772		13.772	12.948	17.101	17.101	17.101	0.000	88.399

**Remarks**

**D. Acquisition Strategy**

JSAM

The overall JSAM acquisition approach is incremental and phased due to the complexity of interfacing with almost 200 aircraft types and models with different mission sets, ALSE, cockpit layouts, priorities, etc. The JSAM MBU-25 FW effort will test and field the Pressure Breathing for Gravity (PBG) Mask to aircraft platforms through an SDD contract. An Request For Proposal will be released to solicit industry for JSAM FW procurement using a full and open competition. The Modified M53 (MM53) effort will test and field a mask for aircrew positions not requiring PBG capabilities. This contract will be awarded via sole source to Avon Protection Systems, Cadillac, Michigan to modify a commercially available mask (M53). JSAM RW MPU-5 Low Rate Production (LRIP) and Full Rate Production (FRP) assets will be procured using contract options. JSAM RW MPU-5 Low Rate Production (LRIP) and Full Rate Production (FRP) assets will be procured using contract options. JSAM RW MPU-5 Engineering and Manufacturing Development activities are performed via a contract awarded using a full and open competition, best value contracting strategy. The existing contract includes options for LRIP and FRP. A full and open competition, best value contracting strategy will be utilized to support additional Full Rate Production upon completion of the existing contract requirements and execution of options.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
JSGPM  The JSGPM 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.		
UIPE  UIPE will use an incremental development approach. UIPE Increment 1 will pursue a Modified Commercial-Off-The-Shelf/Non-Developmental Item (COTS/NDI) Acquisition Strategy; full and open competition will be used. Following Milestone (MS) B approval, contracts will be awarded and integrated Developmental Test/Operational Test (DT/OT) will be initiated on selected candidate system(s) during the Engineering and Manufacturing Development (EMD) phase. At the end of EMD, those candidates meeting UIPE Increment 1 requirements and that offer best value to the Government will move forward into Low Rate Initial Production (LRIP) and Operational Test and Evaluation (OT&E). Following OT&E, effective and suitable systems will be considered for Full-Rate Production (FRP). Increment 1 of UIPE will ultimately provide CB protective equipment with improved operational capability to the U.S. Special Operations Command.		
<b><u>E. Performance Metrics</u></b> N/A		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
** JSAM - HW S - JSAM MPU-5 (RW) Contractor Development	C/CPAF	AVOX Systems Inc.:Lancaster, NY	22.190	1.062	Jan 2012	0.000		0.000		-		0.000	Continuing	Continuing	7.209
HW S - JSAM JSF	C/CPFF	GENTEX Corp.:Rancho Cucamonga, CA	0.000	0.352	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - JSAM FW	C/CPFF	GENTEX Corp.:Rancho Cucamonga, CA	0.000	0.300	Dec 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JSAM FW - JSAM MBU-25/26 (FW) Test/LRIP Assets	C/CPFF	GENTEX Corp.:Rancho Cucamonga, CA	0.000	0.000		0.743	Mar 2013	0.842	Mar 2014	-		0.842	Continuing	Continuing	0.000
JSAM Modified M53 (FW) Test/LRIP Assets	C/FFP	TBD:	0.000	0.000		0.060	Mar 2013	0.240	Mar 2014	-		0.240	Continuing	Continuing	0.000
JSAM JSF	C/CPFF	GENTEX Corp.:Rancho Cucamonga, CA	0.000	0.000		1.393	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JSAM RW - HW S - JSAM MBU-5 (RW) Test Components	C/FFP	AVOX Systems Inc.:Lancaster, NY	0.000	0.000		0.530	Jan 2013	0.215	Jan 2014	-		0.215	Continuing	Continuing	0.000
** JSGPM - HW C - ZZAT Filter/M61	C/CPIF	Various:	0.000	0.000		0.600	Feb 2013	1.200	Feb 2014	-		1.200	Continuing	Continuing	0.000
** UIPE - HW S - Prototype Garment Development	C/FFP	Various:	0.000	0.294	Mar 2012	0.018	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			22.190	2.008		3.344		2.497		0.000		2.497			7.209

<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
** JSAM - ES S - JSAM MBU-25/26 (FW)	MIPR	Various:	0.000	0.981	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Product Team and Technical Support															
ES S - JSAM MPU-5 (RW) Integrated Product Team and Technical Support	MIPR	Various:	0.000	0.631	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** JSAM FW - ES S - JSAM MBU-25/26 (FW) Integrated Product Team and Technical Support	MIPR	Various:	0.000	0.000		0.760	Jan 2013	3.763	Jan 2014	-		3.763	Continuing	Continuing	0.000
ES S - JSAM-JSF	MIPR	Various:	0.000	0.000		0.088	Jan 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JSAM RW - ES S - JSAM MBU-5 (RW) Integrated Product Team and Technical Support	MIPR	Various:	0.000	0.000		1.790	Jan 2013	0.566	Jan 2014	-		0.566	Continuing	Continuing	0.000
** JSGPM - TD/D SB - JSGPM Filter	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.333	0.000		0.179	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES C - JSGPM Filter	MIPR	Naval Research Lab (NRL):Washington, DC	0.250	0.000		0.100	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES C - ZZAT Filter/M61	MIPR	TBD:	0.000	0.000		0.000		0.400	Feb 2014	-		0.400	Continuing	Continuing	0.000
** UIPE - ES S - Prototype Garment - Manufacturing Readiness Assessment	C/FFP	Joint Research and Development Inc.:Stafford, VA	0.000	0.114	Jun 2012	0.055	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.583	1.726		2.972		4.729		0.000		4.729			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSAM - OTE S - MBU-25/26 (FW)	MIPR	Various:	14.166	0.889	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.404



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental and Operational Test															
OTHT SB - JSAM MPU-5 (RW) Developmental Test	MIPR	Various:	5.054	0.707	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.185
** JSAM FW - DTE S - JSAM FW Developmental Test	MIPR	TBD:	0.000	0.000		1.182	Mar 2013	5.438	Mar 2014	-		5.438	Continuing	Continuing	0.000
OTE S - JSAM FW Operational Test	MIPR	Various:	0.000	0.000		0.000		4.371	Mar 2014	-		4.371	Continuing	Continuing	0.000
DTE S - JSAM JSF Developmental Testing	MIPR	Various:	0.000	0.000		0.220	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JSAM RW - OTE S - JSAM MBU-5 (RW) Operational Testing	MIPR	Various:	0.000	0.000		3.313	Jan 2013	3.685	Jan 2014	-		3.685	Continuing	Continuing	0.000
** JSGPM - DTE SB - JSGPM Filter Testing	MIPR	Various:	2.370	0.000		0.625	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
** UIPE - DTE S - Prototype Garment - Integrated DT/OT	MIPR	Various:	0.000	1.703	Mar 2012	0.653	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
OTHT S - Test and Evaluation IPT Support	MIPR	Various:	0.000	0.460	Dec 2011	0.370	Dec 2012	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			21.590	3.759		6.363		13.494		0.000		13.494			0.589

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSAM - PM/MS SB - Program Management Support	MIPR	Various:	16.063	4.480	Dec 2011	0.000		0.000		-		0.000	Continuing	Continuing	5.421
** JSAM FW - PM/MS C - JSAM FW Program Management Support	MIPR	Various:	0.000	0.000		0.741	Mar 2013	3.600	Dec 2014	-		3.600	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM/MS C - JSAM-JSF Program Management Support	SS/FFP	Various:	0.000	0.000		0.299	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JSAM RW - PM/MS SB - JSAM MBU-5 (RW) Program Management Support	MIPR	Various:	0.000	0.000		0.979	Jan 2013	1.571	Dec 2013	-		1.571	Continuing	Continuing	0.000
** JSGPM - PM/MS C - Program Management	MIPR	Various:	0.400	0.000		0.400	Feb 2013	0.405	May 2014	-		0.405	Continuing	Continuing	0.000
PM/MS C - ARPI	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.100	Feb 2013	0.000		-		0.000	Continuing	Continuing	0.000
** UIPE - PM/MS C - Program Management, Technical and IPT Support.	C/FFP	Various:	0.000	1.352	Mar 2012	0.773	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			16.463	5.832		3.292		5.576		0.000		5.576			5.421
<b>Project Cost Totals</b>			60.826	13.325		15.971		26.296		0.000		26.296			13.219

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Chemical and Biological Defense Program			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 FW - DT MBU-25 FW	[REDACTED]																											
JSAM FW - MS C LRIP MBU-25 FW	[REDACTED]																											
JSAM FW - MS C FRP MBU-25 FW	[REDACTED]																											
JSAM FW - DT MM53	[REDACTED]																											
JSAM FW - MS C LRIP MM53	[REDACTED]																											
JSAM FW - MS C FRP MM53	[REDACTED]																											
JSAM FW - IOC MM53	[REDACTED]																											
** JSAM RW - Production Qualification Test Asset Production	[REDACTED]																											
JSAM RW - Production Qualification Testing	[REDACTED]																											
JSAM RW - Airworthiness Test	[REDACTED]																											
JSAM RW - MS C/LRIP	[REDACTED]																											
JSAM RW - MOT&E	[REDACTED]																											
JSAM RW - FRP	[REDACTED]																											
JSAM RW - IOC	[REDACTED]																											
** JSGPM - ARPI Integration Testing	[REDACTED]																											
JSGPM - TIC Filter TECH Transition	[REDACTED]																											
JSGPM - ARPI TD Contract Award	[REDACTED]																											
JSGPM - TIC Prototype Development (JSTO Technology 1)	[REDACTED]																											
JSGPM - TIC Filter Testing (JSTO Technology 1)	[REDACTED]																											
JSGPM - Prototype Development (JSTO Technology 2)	[REDACTED]																											
JSGPM - Prototype Testing (JSTO Technology 2)	[REDACTED]																											

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
** UIPE - Milestone B	■																											
UIPE - SDD Contract Award		■																										
UIPE - Critical Design Review		■																										
UIPE - Integrated DT/OT		■	■	■																								
UIPE - Approved CPD	■	■	■	■																								
UIPE - Milestone C / LRIP							■	■																				
UIPE - Operational Test & Evaluation							■	■	■	■																		
UIPE - Full Rate Production											■	■																
UIPE - SOCOM IOC												■	■															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSAM FW - DT MBU-25 FW	1	2012	2	2014
JSAM FW - MS C LRIP MBU-25 FW	2	2014	2	2014
JSAM FW - MS C FRP MBU-25 FW	2	2017	2	2017
JSAM FW - DT MM53	1	2014	3	2014
JSAM FW - MS C LRIP MM53	2	2014	2	2014
JSAM FW - MS C FRP MM53	4	2015	4	2015
JSAM FW - IOC MM53	1	2017	1	2017
** JSAM RW - Production Qualification Test Asset Production	1	2012	4	2012
JSAM RW - Production Qualification Testing	4	2012	3	2013
JSAM RW - Airworthiness Test	4	2012	2	2014
JSAM RW - MS C/LRIP	4	2013	4	2013
JSAM RW - MOT&E	4	2014	2	2015
JSAM RW - FRP	4	2015	4	2015
JSAM RW - IOC	2	2016	2	2016
** JSGPM - ARPI Integration Testing	2	2012	4	2012
JSGPM - TIC Filter TECH Transition	4	2012	4	2012
JSGPM - ARPI TD Contract Award	1	2013	1	2013
JSGPM - TIC Prototype Development (JSTO Technology 1)	2	2013	3	2014
JSGPM - TIC Filter Testing (JSTO Technology 1)	3	2014	1	2015
JSGPM - Prototype Development (JSTO Technology 2)	1	2015	4	2016
JSGPM - Prototype Testing (JSTO Technology 2)	1	2017	3	2017
** UIPE - Milestone B	1	2012	1	2012

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
UIPE - SDD Contract Award	2	2012	2	2012
UIPE - Critical Design Review	2	2012	2	2012
UIPE - Integrated DT/OT	2	2012	1	2013
UIPE - Approved CPD	1	2012	1	2013
UIPE - Milestone C / LRIP	3	2013	3	2013
UIPE - Operational Test & Evaluation	3	2013	4	2013
UIPE - Full Rate Production	1	2014	1	2014
UIPE - SOCOM IOC	4	2014	4	2014

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IS5: <i>INFORMATION SYSTEMS (EMD)</i>	-	4.699	2.045	9.267	-	9.267	17.636	20.643	15.471	17.508	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP).

Efforts included in this project are: (1) Joint Effects Model (JEM) Increment 2 and (2) Software Support Activity (SSA).

The Joint Effects Model (JEM) is the DoD's only accredited model that has been operationally tested and deemed effective for predicting hazards associated with the release of contaminants into the environment. JEM is a software-only, ACAT III program that is being developed in separate increments and is capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents; high altitude releases, incident source prediction to include NTA events, urban CBRN/Toxic Industrial Hazard environments, human inhalation, contagious/infectious disease, population movements, efficacy of medical countermeasures, industrial transport; building interiors, and human performance degradation. Battlespace commanders and first responders must have a CBRN hazard prediction capability in order to make decisions that will minimize risks of CBRN contamination and enable them to continue mission operations. JEM operates in an integrated fashion with operational and tactical Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems, and in a standalone mode. JEM interfaces and communicates with the other programs such as JWARN, weather systems, intelligence systems, and various databases.

JEM and JWARN Increment 2 will utilize the Joint Capabilities Integration and Development System (JCIDS) Manual prescribed Agile Information Technology Box "IT Box" concept for managing requirements for the follow-on increments of capability development. Use of the "IT Box" acquisition approach increases flexibility and will expedite fielding of Information System products through build decisions versus traditional DoD Milestone Decisions. Each program will use an Information Systems Initial Capabilities Document (IS ICD) to describe the overall development effort. After the IS ICD is approved, future requirement details will be captured in Requirements Definition Packages (RDP) and will be approved at the Functional Capability Board (FCB) level. In order to support an agile incremental approach, each program will ensure that the "IT Box" describes the entire IT program and not just a single increment. 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 SSA is a user developmental support and service organization focusing on development assistance and net-centric interoperability. The SSA provides the CBRN Warfighter with Joint Service solutions for Integrated Architectures, Information Assurance, Verification, Validation and Accreditation (VV&A) and Data Management;

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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interoperable and integrated net-centric, Service-oriented, composable solutions for CBD; and infusion of latest technologies into programs of record. The CBRN user community and related communities of interest have the need for a CBRN "plug and play" capability to allow interoperability and re-configurability across the enterprise. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other Service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

The SSA also directly supports various Bio-Surveillance efforts in training and logistics coordination. The SSA is re-baselining the entire Information Management/Information Technology (IM/IT) work-flow in support of the Bio-Surveillance Portal. By creating a catalog of portlets a user will be able to select the portlets that they need/use and will have access to data that is appropriate for them in a customizable format.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p><b>Title:</b> 1) JEM Increment 2 Developmental Test and Evaluation</p> <p><b>FY 2014 Plans:</b> Perform Government assessment of competitive prototypes to assist in contracting technical assessment and downselect decision. Perform Government Development Test of JEM Increment 2 capabilities to support Operational Test and Milestone C (MS C) decision.</p>	0.000	0.000	0.547
<p><b>Title:</b> 2) JEM Increment 2 Program Development</p> <p><b>FY 2014 Plans:</b> Award competitive prototyping down-select option and develop JEM Increment 2 software baseline.</p>	0.000	0.000	6.012
<p><b>Title:</b> 3) JEM Increment 2 Program Management</p> <p><b>FY 2013 Plans:</b> Perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Perform competitive prototyping contract down-select decision and award.</p> <p><b>FY 2014 Plans:</b> Perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Complete execution of Milestone B (MS B) for JEM Increment 2.</p>	0.000	0.152	0.721
<p><b>Title:</b> 4) SSA Policies, Standards and Guidelines</p> <p><b>FY 2012 Accomplishments:</b> Continued updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Continued surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provided M&amp;S strategic and accreditation support.</p> <p><b>FY 2013 Plans:</b></p>	0.244	0.198	0.208



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Update 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.  <b>FY 2014 Plans:</b> Continue updates to 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.				
<b>Title:</b> 5) SSA Integrated Architecture  <b>FY 2012 Accomplishments:</b> Continued required modifications to the Integrated Architecture for JPEO-CBD Enterprise on host platforms. Continued efforts to document CB Information Systems infrastructure and technical standards. Continued to provide Net-Centric Assessment for programs. Reviewed and updated the Common CBRN Interface standards on operational systems, including a CCSI. Developed new interfaces as required.  <b>FY 2013 Plans:</b> Continue required modifications to the Integrated Architecture for JPEO-CBD Enterprise 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 Common CBRN Sensor Interface (CCSI).  <b>FY 2014 Plans:</b> Continue required modifications to the Integrated Architecture for JPEO-CBD Enterprise 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.		0.808	0.239	0.251
<b>Title:</b> 6) SSA Enterprise Support and Services  <b>FY 2012 Accomplishments:</b> Continued to provide support processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy. Modified support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines.  <b>FY 2013 Plans:</b> Support processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy.  <b>FY 2014 Plans:</b>		1.371	0.156	0.163

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue to provide 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.				
<b>Title:</b> 7) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model		0.753	0.174	0.183
<b>FY 2012 Accomplishments:</b> Continued to provide CBRN Data Model development for Community of Interest.				
<b>FY 2013 Plans:</b> Refine CBRN Data Model to maintain relevancy for Community of Interest.				
<b>FY 2014 Plans:</b> Refine CBRN Data Model to maintain relevancy for Community of Interest.				
<b>Title:</b> 8) SSA Information Assurance		0.601	0.449	0.471
<b>FY 2012 Accomplishments:</b> Continued situational awareness and initiated actions to improve or restore IA posture to keep systems certified in accordance with DoD standards for JPEO-CBD information system programs.				
<b>FY 2013 Plans:</b> Maintain situational awareness and initiate actions to improve or restore IA posture to keep systems certified in accordance with DoD standards for JPEO-CBD information system programs.				
<b>FY 2014 Plans:</b> Maintain situational awareness and initiate actions to improve or restore IA posture to keep systems certified in accordance with DoD standards for JPEO-CBD information system programs.				
<b>Title:</b> 9) SSA Policy and Standards Repository		0.359	0.349	0.366
<b>FY 2012 Accomplishments:</b> Updated the repository for applicable Enterprise policies, standards, and guidelines.				
<b>FY 2013 Plans:</b> Maintain the repository for applicable Enterprise policies, standards, and guidelines.				
<b>FY 2014 Plans:</b> Maintain the repository for applicable Enterprise policies, standards, and guidelines.				
<b>Title:</b> 10) SSA Technology Transition Support		0.563	0.328	0.345

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p><b><i>FY 2012 Accomplishments:</i></b> Continued to provide Technology Transition support services (common components and services) for CBD programs.</p> <p><b><i>FY 2013 Plans:</i></b> Provide Technology Transition support services (common components and services) for CBD programs.</p> <p><b><i>FY 2014 Plans:</i></b> Provide Technology Transition support services (common components and services) for CBD programs.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	4.699	2.045	9.267

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	FY 2012	FY 2013	FY 2014 <u>Base</u>	FY 2014 <u>OCO</u>	FY 2014 <u>Total</u>	FY 2015	FY 2016	FY 2017	FY 2018	<u>Cost To Complete</u>	<u>Total Cost</u>
• IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	8.917	10.091	6.518		6.518	3.990	7.734	11.995	13.034	Continuing	Continuing
• G47101: <i>JOINT WARNING &amp; REPORTING NETWORK (JWARN)</i>	4.676	2.646	1.112		1.112	0.766	0.456	4.589	6.589	Continuing	Continuing
• JC0208: <i>JOINT EFFECTS MODEL (JEM)</i>	0.000	0.000	0.000		0.000	1.242	3.417	5.069	3.086	Continuing	Continuing
• JS5230: <i>SOFTWARE SUPPORT ACTIVITY (SSA)</i>	0.000	0.000	0.100		0.100	0.100	0.100	0.100	0.100	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

JEM

The program plans to award multiple development contracts in a competitive prototyping phase prior to downselecting a single JEM developer and integrator.

SSA

The SSA provides enterprise-wide services and coordination across all CBDP programs that contain data or software, or are capable of linking to the Global Information Grid (GIG). The SSA facilitates interoperability, integration, and supportability of existing and developing IT and National Security Systems (NSS). 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,

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>	<b>PROJECT</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	IS5: <i>INFORMATION SYSTEMS (EMD)</i>

integration and supportability of enterprise-wide services. Next follows work with user communities to develop and demonstrate enterprise-wide common architectures, products and services. (BA5 - System Development and Demonstration). 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. (BA7 - Operational Systems Development).

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - SW SB - JEM Increment 2 - Hazard Prediction Model Development and Integration	C/CPAF	TBD:	0.000	0.000		0.000		6.012	Mar 2014	-		6.012	Continuing	Continuing	0.000
** SSA - HW S - Product Development	C/FFP	Various:	2.719	1.349	Mar 2012	0.799	Mar 2013	0.839	Mar 2014	-		0.839	Continuing	Continuing	0.000
<b>Subtotal</b>			2.719	1.349		0.799		6.851		0.000		6.851			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** SSA - ES S - Support Costs	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	3.678	2.560	Mar 2012	0.486	Mar 2013	0.497	Mar 2014	-		0.497	Continuing	Continuing	0.000
<b>Subtotal</b>			3.678	2.560		0.486		0.497		0.000		0.497			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JEM - DTE SB - JEM Increment 2 - Hazard Prediction Model Development Test	MIPR	Various:	6.813	0.000		0.000		0.547	Mar 2014	-		0.547	Continuing	Continuing	0.000
** SSA - DTE S - Test and Evaluation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	1.528	0.321	Mar 2012	0.423	Mar 2013	0.446	Mar 2014	-		0.446	Continuing	Continuing	0.000
<b>Subtotal</b>			8.341	0.321		0.423		0.993		0.000		0.993			0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 Incr. 2 - Multi-Service Operational Test and Evaluation (MOT&E)/LOG Demo																												
JEM Incr. 2 - C2 FOT&E																												
JEM Incr. 2 - Information System Initial Capability Document (IS ICD)																												
JEM Incr. 2 - Requirements Definition Package (RDP) Development and Approval																												
JEM Incr. 2 - Baseline Requirements Definition Package (RDP) Build Decision (BD)																												
JEM Incr. 2 - C2 Integration Requirements Definition Package (RDP) Build Decision																												
JEM Incr. 2 - Analyst Support Requirements Definition Package (RDP) Build Decision (BD)																												
JEM Incr. 2 - Emerging Capability Requirements Definition Package (RDP) Build Decision (BD)																												
JEM Incr. 2 - Integrated Development Test & Operational Test																												
JEM Incr. 2 - Baseline Capability Requirements Definition Package (RDP) IOC																												
JEM Incr. 2 - Multiple Capability Drop (CD) Fielding Decisions (FD)																												
** SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations																												
SSA - Architecture advisory services to support Warfighter Enterprise and Program Integrated Architectures																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Demonstrate, Verify, Test Technology Transition capabilities																												
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> IS5: <i>INFORMATION SYSTEMS (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM Incr. 2 - Multi-Service Operational Test and Evaluation (MOT&E)/LOG Demo	3	2015	4	2015
JEM Incr. 2 - C2 FOT&E	4	2015	4	2017
JEM Incr. 2 - Information System Initial Capability Document (IS ICD)	1	2013	3	2013
JEM Incr. 2 - Requirements Definition Package (RDP) Development and Approval	3	2013	1	2017
JEM Incr. 2 - Baseline Requirements Definition Package (RDP) Build Decision (BD)	2	2014	2	2014
JEM Incr. 2 - C2 Integration Requirements Definition Package (RDP) Build Decision	4	2014	4	2014
JEM Incr. 2 - Analyst Support Requirements Definition Package (RDP) Build Decision (BD)	4	2015	4	2015
JEM Incr. 2 - Emerging Capability Requirements Definition Package (RDP) Build Decision (BD)	1	2017	1	2017
JEM Incr. 2 - Integrated Development Test & Operational Test	2	2014	2	2018
JEM Incr. 2 - Baseline Capability Requirements Definition Package (RDP) IOC	3	2015	3	2015
JEM Incr. 2 - Multiple Capability Drop (CD) Fielding Decisions (FD)	3	2015	4	2018
** SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2012	4	2018
SSA - Architecture advisory services to support Warfighter Enterprise and Program Integrated Architectures	1	2012	4	2018
SSA - Demonstrate, Verify, Test Technology Transition capabilities	1	2012	4	2018
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2012	4	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	-	197.907	212.056	263.443	-	263.443	228.199	183.390	151.455	184.222	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project funds the development of reagents, assays, and diagnostic equipment for biological warfare agents (BWA) defense and expands chemical and biological detection capabilities. Its primary mission is enhancing CBRN information sharing across the Department of Defense's (DoD) medical surveillance, public health, and chemical/biological defense communities to enhance chemical and biological medical health situational awareness and coordinate integrated CBRN system solutions.

The Medical Countermeasure (MCM) Advanced Development and Manufacturing (ADM) capability (formerly the 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). Future funding will be used to maintain the facility in a state of readiness to support MCM product development, FDA licensure and manufacture of MCMs.

The ADM effort is being executed in two phases. Phase I is for the establishment, commissioning, and validation of the MCM capability. This project funds the establishment of a facility(ies) to be located in the United States and its territories. Two ADM suites, at Bio Surety Level (BSL) 3 will be established during the base contract period, with options to incrementally increase capacity. In Phase II, the contractor team will support and maintain that capability in a state of readiness to support MCM development (under the 'Animal Rule' as applicable) and manufacturing and assist in training personnel in its use. This includes transition and integration of new technologies, from pre-Investigational New Drug Application phase with readiness to support simultaneous operations, through FDA licensure.

Two major medical programs critical to accomplishing the Biosurveillance mission are supported under this project in order to streamline collaboration and integration efforts, maintain continuity and efficiency, and to minimize duplication of efforts. Specifically, these efforts include but are not limited to the Critical Reagents Program (CRP), and Next Generation Diagnostic System (NGDS), These efforts address the President's priority of developing a robust portfolio of cross-cutting resources and materiel solutions that support the National Security Strategy, National Military Strategy to Combat Weapons of Mass Destruction, the National Strategy for Countering Biological Threats, and the needs of the Warfighter.

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. After FY14, CRP funding is combined with NGDS to form a medical diagnostic portfolio.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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BSV will support the Joint 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 FY14 to Pacific Command (PACOM). Future ATD developments will continue to bridge communication gaps between US Forces across other Combatant Command (COCOMs).

The Next Generation Diagnostics System (NGDS) addresses the mission needs identified in the CBRN Field Analytics ICD (2010). The NGDS is envisioned to be 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 CBRN threat identification and FDA-cleared diagnostics to inform individual patient treatment and CBRN situational awareness and disease surveillance. NGDS Increment 1 Deployable Component will significantly improve diagnostic capabilities for deployable combat health support units (role 3) while also improving operational suitability and affordability. The NGDS Increment 1 Deployable Component is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. The NGDS Increment 1 Service Laboratory Component is intended to provide high throughput Biological threat identification, characterization and diagnostics to fixed site CONUS and OCONUS laboratories operated by the Army, Navy and Air Force in coordination with the Armed Forces Health Surveillance Center. NGDS Increment 2 is intended to provide advanced diagnostics for biological pathogens and toxins, diagnostics for chemical and radiological exposures and to provide capability to lower echelons of care.

The Emerging Infectious Disease - Influenza (EID-Flu) Medical Countermeasure Acquisition program will develop and deliver a U.S. Food and Drug Administration (FDA)-approved, broad-spectrum medical countermeasure to the Warfighter for protection against naturally occurring or biologically engineered influenza viruses. The emergence of a new pandemic strain with no existing effective vaccine or therapeutic is highly likely. The focus of the program is on a treatment option that is more effective than currently available drugs and has the potential to be an effective therapeutic not just for multiple strains of the flu, but many other viruses as well. Completion of activities required for FDA approval for an influenza treatment, expected in fiscal year 2016, is the focus of the SDD Phase.

The Hemorrhagic Fever Virus (HFV) Medical Countermeasure Acquisition Program develops platform-based medical countermeasures (MCMs), using high threat, extremely lethal Biological Warfare Agents (BWAs) of the Filoviridae family agents (Ebola and Marburg) as model systems. Platform-based medical countermeasures will be advanced through the Food and Drug Administration (FDA) licensure via the FDA 'Animal Rule', which allows for the demonstration of efficacy in relevant animal model(s) when human testing is not ethically feasible. The HFV program will also conduct animal model development, refinement and FDA qualification to support the pivotal animal efficacy testing required under the FDA 'Animal Rule'. Animal models will be developed and qualified for parenteral and aerosol indications. Aerosol models are needed to meet the Warfighter requirement to counter BWAs encountered on the battlefield or as a result of terrorist activities. Completion of activities required for FDA approval for Filovirus therapeutics, expected in fiscal year 2018, is the focus of the SDD Phase.

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 system Development and Demonstration (SDD) Phase include the development of large scale manufacturing process

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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and validation of that process, nonclinical studies, demonstration of manufacturing consistency, and expanded clinical human safety studies. The results of these efforts, and those conducted during the EMD phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. To evaluate vaccine effectiveness, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy the requirements of the FDA's "Animal Rule". The DoD anticipates that the FDA will approve these products using the Animal Rule, which allows for the demonstration of efficacy in relevant animal model(s). Upon FDA licensure, the product will transition to full-scale licensed production.

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

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) ADM - Integrated Master Plan  <b>FY 2012 Accomplishments:</b> The engineering contractor (engineering and architectural design and studies) completed and delivered for Government review and acceptance an integrated master plan (IMP) and a detailed manufacturing capability plan.	13.801	0.000	0.000
<b>Title:</b> 2) ADM - Manufacturing Suites  <b>FY 2012 Accomplishments:</b> Began the establishment of two modular manufacturing suites to biosurety level three (3) standards.  <b>FY 2014 Plans:</b> Finalize the establishment of two modular manufacturing suites to biosurety level three (3) standards. Conduct verification and validation of the manufacturing suites to include facility equipment.	34.797	0.000	10.077
<b>Title:</b> 3) ADM - Equipment and Installation.  <b>FY 2012 Accomplishments:</b> Procured, installed, and tested ADM equipment to include single use bioreactors.  <b>FY 2013 Plans:</b> Continue the procurement, installation and test of equipment.  <b>FY 2014 Plans:</b> Continue the procurement, installation and test of equipment.	34.786	23.702	6.000
<b>Title:</b> 4) ADM - Staffing  <b>FY 2012 Accomplishments:</b>	2.048	2.478	2.500

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Provided initial staffing of the ADM facility by contractor personnel.</p> <p><b>FY 2013 Plans:</b> Continue ramp of ADM staffing with Contractor personnel.</p> <p><b>FY 2014 Plans:</b> Continue ADM staffing with Contractor personnel. Contractor personnel will have core competencies to manage the ADM capability in a state of readiness.</p>				
<p><b>Title:</b> 5) ADM - Facility Utilities</p> <p><b>FY 2012 Accomplishments:</b> Provided ADM facility utilities to include electricity, steam, water, water for injection (WFI) and heating, ventilation and air conditioning.</p> <p><b>FY 2013 Plans:</b> Provide for facilities support (utilities, waste disposal).</p> <p><b>FY 2014 Plans:</b> Provide for facilities support (utilities, waste disposal).</p>		4.463	5.048	1.413
<p><b>Title:</b> 6) ADM - Equipment Test and Commissioning</p> <p><b>FY 2013 Plans:</b> Conduct equipment test and commissioning. Prepare for independent validation and attainment of Food and Drug (FDA) Current Good Manufacturing Practice (cGMP) and Current Good Laboratory Practice (cGLP) certification. Validation processes include Design Qualification, Installation Qualification, Operational Qualification, Performance Qualification. Contractor complete and deliver for Government Review and Acceptance a Facility Operation Feasibility Plan.</p>		0.000	10.210	0.000
<p><b>Title:</b> 7) ADM - Program Management</p> <p><b>FY 2012 Accomplishments:</b> Provided strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.</p> <p><b>FY 2014 Plans:</b> Provided strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.</p>		9.411	0.000	6.618
<p><b>Title:</b> 8) ADM - BSL4 GLP T&amp;E</p> <p><b>FY 2012 Accomplishments:</b></p>		0.962	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Initiated a Bio-Safety Level BSL4 Good Laboratory Practice (GLP) Test and Evaluation (T&E) capability to develop medical countermeasures in a safe environment. The BSL4 GLP T&E capability will provide a capability that is appropriately resourced with personnel and equipment to conduct test and evaluation on medical countermeasures that are being developed for biological agents that require BSL4 containment.				
<b>Title:</b> 9) BSV		0.000	0.000	5.000
<b>FY 2014 Plans:</b> Initiate test efforts and logistics support for the Advanced Technology Demonstration (ATD).				
<b>Title:</b> 10) CRP		1.960	2.117	0.000
<b>FY 2012 Accomplishments:</b> Continued development/expansion of biological select agents reference materials to known and emerging threats.				
<b>FY 2013 Plans:</b> Continue development/expansion of biological select agents reference materials to known and emerging threats.				
<b>Title:</b> 11) CRP		1.170	1.200	0.000
<b>FY 2012 Accomplishments:</b> Continued development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.				
<b>FY 2013 Plans:</b> Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.				
<b>Title:</b> 12) CRP		0.670	0.680	0.000
<b>FY 2012 Accomplishments:</b> Continued QA/QC testing to encompass the transition and fielding of biological detection assays.				
<b>FY 2013 Plans:</b> Continue QA/QC testing to encompass the transition and fielding of biological detection assays.				
<b>Title:</b> 13) CRP		0.870	0.900	0.000
<b>FY 2012 Accomplishments:</b> Continued to maintain International Standards Organization (ISO) 9001; 17025 and Guide 34 certifications.				
<b>FY 2013 Plans:</b> Continue to maintain ISO 9001; 17025 and Guide 34 certifications.				
<b>Title:</b> 14) CRP		1.311	0.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>FY 2012 Accomplishments:</b> Continued development and integration of medical surveillance enhancement tools that facilitate surveillance and sensor/detector/diagnostic information exchange.				
<b>Title:</b> 15) CRP		2.987	0.000	0.000
<b>FY 2012 Accomplishments:</b> Continued surveillance assessments that identify public health threats and capabilities in countries where US forces are present and deploy threat assessment tools.				
<b>Title:</b> 16) CRP		0.000	0.500	0.000
<b>FY 2013 Plans:</b> Development of strain dossier and comprehensive microbial resource application for strains contained in Unified Culture Collection.				
<b>Title:</b> 17) EID-Flu		0.000	32.912	69.847
<b>FY 2013 Plans:</b> Initiate Phase 3 clinical trials as required by the FDA. Each Phase 3 clinical trial requires the enrollment of at least 1500 patients and is conducted globally to capture both Northern and Southern Hemisphere flu seasons.				
<b>FY 2014 Plans:</b> Continue the global Phase 3 clinical trials.				
<b>Title:</b> 18) HFV		0.000	16.402	42.478
<b>FY 2013 Plans:</b> Continue the development of platform-based MCMs against HFV threats Ebola Zaire or Marburg Viruses. Initiate scale up of manufacturing to meet commercial scale. Prepare for pivotal animal efficacy studies to support licensure of the MCM under the FDA 'Animal Rule'. Complete FDA qualification of the non-human primate model for aerosolized Ebola Zaire required to support the pivotal animal efficacy studies. Initiate the submission of a pre-Emergency Use Authorization (EUA) package to the FDA to enable the Government to expedite the review and approval process of granting a EUA in the event of a naturally occurring emergency or a Bio-terrorist event.				
<b>FY 2014 Plans:</b> Continue activities to scale up manufacturing of the HFV platform-based MCMs to meet commercial scale and initiate the production of pilot manufacturing lots to support FDA licensure. This will also serve as a capability to respond under a EUA, if needed. Initiate pivotal animal efficacy studies via the parenteral route of challenge under Good Laboratory Practices (GLP)				

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
conditions in a Bio Safety Level (BSL) 4. Initiate preparatory activities to support pilot aerosol efficacy studies in a BSL 4, under GLP conditions. Complete FDA qualification of the non-human primate model for aerosolized Marburg required to support the pivotal animal efficacy studies.				
<b>Title:</b> 19) NGDS Increment 1 <b>FY 2013 Plans:</b> Complete other test agency support activities for Increment 1.		0.000	3.296	0.000
<b>Title:</b> 20) NGDS Increment 1 <b>FY 2013 Plans:</b> Initiate clinical trials for 510(k) submission to FDA for cleared assays on Increment 1 platform. Initiate connectivity assessment on selected platform.		0.000	6.531	0.000
<b>Title:</b> 21) NGDS - CRP <b>FY 2014 Plans:</b> Continue development/expansion/scale-up of biological select agents reference materials to known and emerging threats.		0.000	0.000	2.960
<b>Title:</b> 22) NGDS - CRP <b>FY 2014 Plans:</b> Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.		0.000	0.000	2.170
<b>Title:</b> 23) NGDS - CRP <b>FY 2014 Plans:</b> Continue development of prototypes/information for strains contained in Unified Culture Collection.		0.000	0.000	1.525
<b>Title:</b> 24) NGDS - CRP <b>FY 2014 Plans:</b> Continue QA/QC testing to encompass the transition and fielding of biological detection assays.		0.000	0.000	1.111
<b>Title:</b> 25) NGDS - CRP <b>FY 2014 Plans:</b> Continue to maintain ISO certification.		0.000	0.000	0.870
<b>Title:</b> 26) VAC BOT - Recombinant Botulinum Vaccine <b>FY 2012 Accomplishments:</b>		24.864	9.305	0.917



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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Completed manufacturing large scale process validation for serotypes A and B. Initiated manufacturing of consistency lots for serotypes A and B. <b>FY 2013 Plans:</b> Complete manufacturing of consistency lots for serotypes A and B. <b>FY 2014 Plans:</b> Conduct storage and stability testing of consistency lot material.				
<b>Title:</b> 27) VAC BOT - Recombinant Botulinum Vaccine <b>FY 2012 Accomplishments:</b> Continued non-clinical testing. Initiated reproductive toxicity testing and pivotal efficacy testing. Continued requirement for safeguarding biological select agents and toxins. <b>FY 2013 Plans:</b> Continue non-clinical reproductive toxicity testing and pivotal efficacy testing. Continue requirements for safeguarding biological select agents and toxins, and Milestone C. <b>FY 2014 Plans:</b> Continue non-clinical reproductive toxicity testing and pivotal efficacy testing. Continue requirements for safeguarding biological select agents and toxins.		7.638	17.904	21.900
<b>Title:</b> 28) VAC BOT - Recombinant Botulinum Vaccine <b>FY 2012 Accomplishments:</b> Completed Phase 2 clinical trial. <b>FY 2013 Plans:</b> Initiate Phase 3 clinical trial including planning to evaluate expanded safety in thousands of volunteers. <b>FY 2014 Plans:</b> Continue Phase 3 clinical trial.		1.573	30.500	32.100
<b>Title:</b> 29) VAC PLG <b>FY 2012 Accomplishments:</b> Continued non-clinical studies, to include additional FDA required passive transfer studies. Continued requirement for safeguarding biological select agents and toxins. Initiated reproductive toxicity testing. <b>FY 2013 Plans:</b>		9.414	9.196	10.125

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue non clinical studies, to include additional FDA required passive transfer studies. Continue requirement for safeguarding biological select agents and toxins. Initiate pivotal animal efficacy studies. Continue reproductive toxicity testing. <b>FY 2014 Plans:</b> Complete non clinical studies, to include additional FDA required passive transfer studies. Continue requirement for safeguarding biological select agents and toxins. Continue pivotal animal efficacy studies. Complete reproductive toxicity testing.				
<b>Title:</b> 30) VAC PLG <b>FY 2012 Accomplishments:</b> Continued Phase 2b clinical trial. <b>FY 2013 Plans:</b> Complete Phase 2b clinical trial. Initiate additional FDA required passive transfer studies. <b>FY 2014 Plans:</b> Initiate Phase 3 clinical trial to evaluate expanded safety and efficacy in thousands of volunteers. Initiate pivotal animal efficacy studies. Complete additional FDA required passive transfer studies.		17.548	29.969	35.901
<b>Title:</b> 31) VAC PLG <b>FY 2012 Accomplishments:</b> Completed large scale manufacturing process validation, assay validation, and cleaning validation. Initiated consistency lot production and testing. <b>FY 2013 Plans:</b> Continue consistency lot production and testing. <b>FY 2014 Plans:</b> Complete consistency lot production and testing. Conduct Milestone C decision review.		18.630	1.362	1.450
<b>Title:</b> 32) VAC PLG <b>FY 2012 Accomplishments:</b> Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. <b>FY 2013 Plans:</b>		6.730	5.449	6.012

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. <b>FY 2014 Plans:</b> Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.			
<b>Title:</b> 33) VAC SIP <b>FY 2012 Accomplishments:</b> Conducted storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. <b>FY 2013 Plans:</b> Continue conducting storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. <b>FY 2014 Plans:</b> Continue conducting storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program.	2.274	2.395	2.469
<b>Accomplishments/Planned Programs Subtotals</b>	197.907	212.056	263.443

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	5.371	0.498	0.499		0.499	13.414	14.551	9.816	3.277	Continuing	Continuing
• JM8788: <i>NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)</i>	2.380	26.934	3.311		3.311	10.682	10.391	5.154	4.080	0.000	62.932
• JX0005: <i>DOD BIOLOGICAL VACCINE PROCUREMENT</i>	0.180	0.185	0.185		0.185	6.991	25.058	41.716	39.410	Continuing	Continuing
• JX0210: <i>CRITICAL REAGENTS PROGRAM (CRP)</i>	0.998	1.012	0.000		0.000	0.000	0.000	0.000	0.000	0.000	2.010
<b>Remarks</b>											

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**D. Acquisition Strategy**

**ADM**

The ADM Capability will use a FAR based ten (10) year [two (2) year base with four (4) two (2) year options] Cost Plus Fixed fee (CPFF) contract - Full and Open competition with best value to the government. A Request for Proposal (RFP) was released in August 2011; final source selection delayed due to a pre-contract award protest filed with the U.S. Government Accountability Office in June 2012. Contract award is now planned for 2QFY13. The establishment of the CMO component of the ADM will occur within the base period while the other core service components (CRO, T&E, F&F) will be available shortly after the contract award. The CMO will utilize modular and disposable/single use equipment to allow for flexibility in manufacturing various MCM products within the same facility. The contractor will complete facility commissioning, support independent validation, and attain Current Good Manufacturing Practice (cGMP) and Current Good Laboratory Practice (cGLP) status within 24 months following contract award and provide expertise necessary to maintain the facility in readiness to support the development and manufacture of MCMs, and conduct training. The DoD will continue to issue future separate contracts for specific MCM products - i.e. the MCM pipeline .

**BSV**

Objective is the delivery of a set of capabilities to 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 from the Biosurveillance Advanced Technology Demonstration (ATD). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's). Through evaluation and maturation of hardware/software tools and devices from the Biosurveillance ATD, this project office will emphasize opportunities from common component technology and modularity. After the Materiel Development Decision, AoAs, and Milestone A, a Request for Proposal will be released selecting the best value for the government for development of the CBRN Biosurveillance capability. Operational testing of competitive prototypes in the relevant environment will be conducted following MS B. After Milestone C, during the Production and Deployment phase, the system will achieve operational capability that satisfies mission needs; conduct a Low-Rate Production Decision Review and a Full Rate Production Decision Review, leading to Full-Rate production and deployment.

**CRP**

The Critical Reagents Program's (CRP) strategy establishes a core research and development capability to develop biological threat agent, genomic reference materials (antigens, nucleic acids, and antibodies) and detection and diagnostic assays for biothreat agent detection that shall be horizontally inserted across multiple detection and diagnostic platforms. In addition, this strategy will implement a formal, validated advanced development process to transition new assays into production and integration with the appropriate detection/diagnostic platform.

**EID FLU**

EID-Flu MCM program is utilizing a single step acquisition approach to reach FDA Approval. A single step approach, which is the acquisition of a defined capability in one increment, is necessary for this acquisition as a result of the FDA regulatory process and maturity of the product. To accelerate drug development and reduce

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risk to the program, the MCM entered the program with active IND-status. It is the intent of the EID-Flu program to utilize the MCM Advanced Development and Manufacturing (ADM) capabilities. If the FDA mandates post-marketing surveillance studies, they will be conducted during Production and Deployment. In addition, the current contractor has the capability to manufacture the quantities currently required for DoD use should the need arise.

HFV

The acquisition strategy uses a parallel evaluation of drug candidates against the lethal Ebola Zaire and Marburg viruses to achieve competitive prototyping in the ACD&P phase. 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(s) will submit a New Drug Application(s) for the Ebola Zaire and Marburg therapeutics 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. The DoD Acquisition strategy for the HFV program has been uniquely tailored to a MCM class approach designed to provide a more efficient mechanism for pursuing additional MCM candidates as required.

NGDS

The Next Generation Diagnostics System (NGDS) will develop and field an enhanced CBRN analytical and diagnostic system to the Joint force through an evolutionary acquisition strategy. NGDS Increment 1 Deployable Component will follow a developmental acquisition strategy to field Biological Warfare Agent diagnostic analytical devices. Additional DoD-unique BWA diagnostic and environmental surveillance capabilities will be added to the downselected platform capabilities. BA4 funds were used to conduct competitive prototyping and early operational assessments on the commercial hardware diagnostic systems immediately following MS A to support downselect to the final NGDS Increment 1 system.

VAC BOT

A prime system contractor 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 System Development and Demonstration (SDD) 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.

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VAC PLG

The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). In order to reduce technical program risk in the Plague vaccine program, the program office conducted competitive prototyping, 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 will function as the FDA regulatory sponsor and will perform 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 System Development and Demonstration (SDD) 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.

VAC SIP

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 Practices (GMP) storage and periodic potency testing to support the FDA regulated Investigational New Drug (IND) reporting requirements. This Department of Defense program supports the Federal interagency with this effort, as well as academic and industry partners.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - HW S - Initiate ADM capability	C/CPFF	TBD:	0.000	34.797	Mar 2013	0.000		10.077	Mar 2014	-		10.077	Continuing	Continuing	0.000
HW SB - Procure, Install and Test Equipment	C/CPFF	TBD:	0.000	34.786	Mar 2013	0.000		6.000	Mar 2014	-		6.000	Continuing	Continuing	0.000
HW S - Establish and Commission, Procure Equipment, Engineering, Establish BSL-3	C/CPFF	TBD:	0.000	0.000		23.702	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** BSV - SW SB - BSV Portal SW Testing and Integration	PO	Various:	0.000	0.000		0.000		0.650	Mar 2014	-		0.650	Continuing	Continuing	0.000
HW SB - BICS HW Component Testing and Integration	PO	Various:	0.000	0.000		0.000		0.500	Mar 2014	-		0.500	Continuing	Continuing	0.000
** CRP - HW C - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	Various:	6.652	1.996	Mar 2012	1.815	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various:	1.063	0.760	Mar 2012	1.047	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW C - Surveillance concept assessments Support	SS/FFP	Various:	0.000	2.963	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW C - Tool enhancement/sensor information exchange	MIPR	Various:	0.000	0.258	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** EID FLU - SW SB - TMT EID FLU	C/CPFF	TBD:	0.000	0.000		25.514	Mar 2013	59.190	Mar 2014	-		59.190	Continuing	Continuing	0.000
** HFV - HW S - Pivotal Animal Efficacy Studies	C/CPIF	TBD:	0.000	0.000		14.012	Jun 2013	36.106	Mar 2014	-		36.106	Continuing	Continuing	0.000
** NGDS - HW C - CRP Scale up of Biological	MIPR	US Army Medical Research Institute of Infectious Disease	0.000	0.000		0.000		0.750	Jun 2014	-		0.750	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Threat Agent Reference Materials		(USAMRIID):Fort Detrick, MD													
HW C - CRP Scale up of Biological Threat Agent Reference Materials	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.550	Jun 2014	-		0.550	Continuing	Continuing	0.000
HW C - CRP Development of Biological Threat Agent Reference Materials and Assays	MIPR	USA Research Dev & Engr Cmd (RDECOM):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.578	Jun 2014	-		0.578	Continuing	Continuing	0.000
** VAC BOT - HW S - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	27.024	9.874	Mar 2012	26.558	Mar 2013	0.817	Mar 2014	-		0.817	Continuing	Continuing	0.000
** VAC PLG - HW S - Manufacturing, Validation, and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	48.134	27.120	Mar 2012	12.459	Mar 2013	14.442	Mar 2014	-		14.442	Continuing	Continuing	0.000
<b>Subtotal</b>			82.873	112.554		105.107		129.660		0.000		129.660			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - ES C - Medical Utilities	C/CPFF	TBD:	0.000	4.463	Mar 2013	5.048	Mar 2013	1.413	Mar 2014	-		1.413	Continuing	Continuing	0.000
ES SB - Integrated Master Plan / Detailed Manufacturing Capability Plan	C/CPFF	TBD:	0.000	13.801	Mar 2013	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ES C - Medical Personnel (Contractor Staffing)	C/CPFF	TBD:	0.000	2.048	Mar 2013	2.478	Mar 2013	2.500	Mar 2014	-		2.500	Continuing	Continuing	0.000



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - Medical Commissioning	C/CPFF	TBD:	0.000	0.000		10.210	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** BSV - ILS S - BSV Portal ILS & System Engr	PO	Various:	0.000	0.000		0.000		0.750	Mar 2014	-		0.750	Continuing	Continuing	0.000
ILS SB - BICS ILS & System Engr	PO	Various:	0.000	0.000		0.000		0.750	Mar 2014	-		0.750	Continuing	Continuing	0.000
** CRP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various:	1.755	0.633	Mar 2012	0.520	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.932	0.135	Mar 2012	0.130	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NGDS - ES C - CRP - Select Biological Threat Agent Reference Material Support	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.000		0.000		2.683	Jun 2014	-		2.683	Continuing	Continuing	0.000
ES C - CRP - NGDS - Select Biological Threat Agent Reference Material Support	MIPR	USA Research Dev & Engr Cmd (RDECOM):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.750	Jun 2014	-		0.750	Continuing	Continuing	0.000
TD/D C - CRP - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground (DPG):Dugway, UT	0.000	0.000		0.000		0.275	Jun 2014	-		0.275	Continuing	Continuing	0.000
ES S - NGDS - Conduct Early Operational Assessment	MIPR	AMEDD Center and School:Ft. Sam Houston, TX	0.000	0.000		0.500	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** VAC BOT - TD/D C - Regulatory Integration (Environmental and FDA	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	3.378	1.676	Mar 2012	3.686	Mar 2013	3.690	Mar 2014	-		3.690	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Documentation) and Delivery System															
** VAC PLG - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	9.246	1.215	Mar 2012	1.517	Mar 2013	1.725	Mar 2014	-		1.725	Continuing	Continuing	0.000
** VAC SIP - VAC SIP - Storage, and Distribution of Vaccines	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	2.070	Mar 2012	2.130	Mar 2013	2.194	Mar 2014	-		2.194	Continuing	Continuing	0.000
<b>Subtotal</b>			15.311	26.041		26.219		16.730		0.000		16.730			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - DTE SB - BSL - 4 T&E	Allot	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.962	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** BSV - OTHC - BSV Portal Development Testing	PO	Various:	0.000	0.000		0.000		0.100	Mar 2014	-		0.100	Continuing	Continuing	0.000
DTE SB - BICS Developmental Testing	PO	Various:	0.000	0.000		0.000		0.250	Mar 2014	-		0.250	Continuing	Continuing	0.000
OTE SB - BICS User Assessment	PO	Various:	0.000	0.000		0.000		0.500	Mar 2014	-		0.500	Continuing	Continuing	0.000
** NGDS - OTHC - NGDS - Conduct Increment 1 Competitive Prototyping DT Testing	MIPR	Various:	0.000	0.000		6.377	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** VAC BOT - DTE C - Testing, Evaluation, and Clinical Trials	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	22.857	11.934	Mar 2012	21.377	Mar 2013	44.310	Mar 2014	-		44.310	Continuing	Continuing	0.000
** VAC PLG - DTE C - PLG - Clinical Trials	C/CPAF	DynPort Vaccine Company (DVC) LLC.:Frederick, MD	46.685	18.080	Mar 2012	24.621	Mar 2013	33.749	Mar 2014	-		33.749	Continuing	Continuing	0.000
<b>Subtotal</b>			69.542	30.976		52.375		78.909		0.000		78.909			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** ADM - PM/MS S - Program Management	Various	Various:	0.000	9.411	Mar 2012	0.000		6.618	Dec 2013	-		6.618	Continuing	Continuing	0.000
** BSV - PM/MS S - Product Management Support	PO	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.000	Mar 2014	-		1.000	Continuing	Continuing	0.000
PM/MS S - Chem Bio Medical systems Office	PO	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.000		0.500	Dec 2013	-		0.500	Continuing	Continuing	0.000
** CRP - PM/MS C - Product Management Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.966	0.433	Mar 2012	0.460	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
PM/MS C - Product Management Support	SS/FFP	Goldbelt Raven LLC.:Frederick, MD	3.806	1.540	Jun 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS C - Chem Bio Medical Systems Office	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	1.133	0.250	Sep 2012	0.160	Sep 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM/MS S - PM/MS C - Product Management Support	SS/FFP	TBD:	0.000	0.000		1.265	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** EID FLU - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	0.000		7.398	Mar 2013	10.657	Feb 2014	-		10.657	Continuing	Continuing	0.000
** HFV - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	0.000		2.390	Jun 2013	6.372	Mar 2014	-		6.372	Continuing	Continuing	0.000
** NGDS - PM/MS C - CRP Product Management Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.000		1.250	Mar 2014	-		1.250	Continuing	Continuing	0.000
PM/MS C - CRP - Product Management Support	SS/FFP	TBD:	0.000	0.000		2.950	Mar 2013	1.800	Jun 2014	-		1.800	Continuing	Continuing	0.000
** VAC BOT - PM/MS C - JPM Chem/Bio Medical Systems (JPM CBMS), Fort Detrick, MD	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.822	6.182	Mar 2012	2.388	Mar 2013	2.386	Mar 2014	-		2.386	Continuing	Continuing	0.000
PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	4.281	2.871	Mar 2012	2.500	Mar 2013	2.512	Mar 2014	-		2.512	Continuing	Continuing	0.000
PM/MS S - Contractor Systems Engineering/ Program Management Support	SS/FFP	Goldbelt Raven LLC.:Frederick, MD	2.968	1.538	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PM/MS S - Contractor Support Engineering	SS/FFP	TBD:	0.000	0.000		1.200	Mar 2013	1.202	Mar 2014	-		1.202	Continuing	Continuing	0.000
** VAC PLG - PM/MS S - Joint Vaccine Acquisition	Allot	JPM Chem/Bio Medical Systems	4.794	1.692	Mar 2012	1.362	Mar 2013	1.551	Mar 2014	-		1.551	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Office		(JPM CBMS):Fort Detrick, MD													
PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	8.163	4.215	Mar 2012	6.017	Mar 2013	2.021	Feb 2014	-		2.021	Continuing	Continuing	0.000
** VAC SIP - PM/MS SB - Management Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.204	Mar 2012	0.265	Mar 2013	0.275	Mar 2014	-		0.275	Continuing	Continuing	0.000
<b>Subtotal</b>			26.933	28.336		28.355		38.144		0.000		38.144			0.000
<b>Project Cost Totals</b>			194.659	197.907		212.056		263.443		0.000		263.443			0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Contract Award																												
ADM - Integrated Master Plan																												
ADM - Manufacturing Capability Plan																												
ADM - Facility Operations Feasibility Plan																												
ADM - Procure Equipment																												
ADM - Establish ADM Facilities																												
ADM - Commissioning and Validation																												
ADM - Qualification And Commissioning Report																												
ADM - Maintain Capability																												
** BSV - AoA																												
BSV - ATD																												
BSV - ATD MDD																												
BSV - MS B - ATD BSP																												
BSV - MS C - ATD BSP																												
** 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																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 FLU - Conduct toxicity, bioequivalence, and renal function studies to support FDA approval																												
EID FLU - Milestone B Decision																												
EID FLU - Phase 3 Clinical Trials required for FDA approval																												
EID FLU - MS C Decision																												
** HFV - Milestone B Decision																												
HFV - Pivotal Animal Efficacy Studies for HFV MCMs																												
HFV - Phase 3 Expanded Safety Clinical Trial																												
HFV - Milestone C Decision																												
** NGDS - Increment 1 MS A																												
NGDS - Conduct market research, CP planning and Source Selection																												
NGDS - Conduct government testing																												
NGDS - Increment 1 Competitive Prototyping Phase																												
NGDS - Anthrax/Viral Hemorrhagic Fever Assay optimization																												
NGDS - Anthrax/VHF clinical trials																												
NGDS - Increment 1 Development and FDA approval of Anthrax/VHF assays																												
NGDS - Increment 1 Tularemia and Plague IVD assay development																												
NGDS - FOC																												
NGDS - IOC																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
NGDS - Increment 1 MS C																												
NGDS - Increment 2 MS A																												
NGDS - Increment 2 MS C																												
** VAC BOT - Non-Clinical Testing (Pivotal Efficacy)																												
VAC BOT - Phase 2 Clinical Trial (A/B)																												
VAC BOT - Consistency Lot Production																												
VAC BOT - Phase 3 Clinical Trial (A/B)																												
VAC BOT - Milestone C/LRIP																												
VAC BOT - Biological Licensure Application (BLA) Submission																												
VAC BOT - FDA Licensure																												
VAC BOT - Initial Operational Capability (IOC)																												
VAC BOT - Full Operational Capability (FOC)																												
VAC BOT - Ongoing Manufacturing, Testing Efforts/Regulatory																												
** VAC PLG - Phase 2 Clinical Trial																												
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy																												
VAC PLG - Process Development - Large Scale																												
VAC PLG - Consistency Lot Production																												
VAC PLG - Milestone C/LRIP																												
VAC PLG - Phase 3 Clinical Trial																												
VAC PLG - Biological Licensure Application (BLA) Submission																												
VAC PLG - FDA Licensure																												



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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; width: fit-content;">                     ** VAC SIP - Storage, distribution, potency testing, biosurety compliance activities                 </div>																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** ADM - Contract Award	2	2013	2	2013
ADM - Integrated Master Plan	2	2013	2	2013
ADM - Manufacturing Capability Plan	2	2013	3	2013
ADM - Facility Operations Feasibility Plan	3	2013	2	2014
ADM - Procure Equipment	3	2013	1	2015
ADM - Establish ADM Facilities	3	2013	4	2015
ADM - Commissioning and Validation	2	2015	2	2016
ADM - Qualification And Commissioning Report	2	2016	2	2016
ADM - Maintain Capability	2	2016	4	2018
** BSV - AoA	2	2013	4	2013
BSV - ATD	3	2013	3	2015
BSV - ATD MDD	3	2015	3	2015
BSV - MS B - ATD BSP	2	2016	2	2016
BSV - MS C - ATD BSP	3	2017	3	2017
** CRP - Expand Select Biological Threat Agent Reference Materials	1	2012	2	2015
CRP - Development of Assays	1	2012	2	2015
CRP - Development and Implementation of Quality Initiatives, Validation Program, and Systems Engineering, QA/QC testing	1	2012	2	2015
CRP - ISO certification	1	2012	4	2014
CRP - Enabling early warning tools and information exchange	1	2012	4	2014
CRP - Surveillance capabilities	1	2012	4	2014
** EID FLU - Conduct toxicity, bioequivalence, and renal function studies to support FDA approval	4	2012	2	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
EID FLU - Milestone B Decision	1	2013	1	2013
EID FLU - Phase 3 Clinical Trials required for FDA approval	3	2013	3	2015
EID FLU - MS C Decision	3	2016	3	2016
** HFV - Milestone B Decision	2	2014	2	2014
HFV - Pivotal Animal Efficacy Studies for HFV MCMs	2	2014	4	2016
HFV - Phase 3 Expanded Safety Clinical Trial	1	2017	4	2017
HFV - Milestone C Decision	3	2018	3	2018
** NGDS - Increment 1 MS A	2	2012	2	2012
NGDS - Conduct market research, CP planning and Source Selection	2	2012	1	2013
NGDS - Conduct government testing	4	2012	2	2013
NGDS - Increment 1 Competitive Prototyping Phase	1	2013	3	2013
NGDS - Anthrax/Viral Hemorrhagic Fever Assay optimization	1	2013	2	2013
NGDS - Anthrax/VHF clinical trials	4	2013	1	2015
NGDS - Increment 1 Development and FDA approval of Anthrax/VHF assays	3	2013	2	2015
NGDS - Increment 1 Tularemia and Plague IVD assay development	2	2015	1	2016
NGDS - FOC	4	2018	4	2018
NGDS - IOC	1	2017	1	2017
NGDS - Increment 1 MS C	3	2015	3	2015
NGDS - Increment 2 MS A	4	2014	4	2014
NGDS - Increment 2 MS C	4	2018	4	2018
** VAC BOT - Non-Clinical Testing (Pivotal Efficacy)	3	2012	2	2015
VAC BOT - Phase 2 Clinical Trial (A/B)	1	2012	2	2012
VAC BOT - Consistency Lot Production	2	2012	4	2013
VAC BOT - Phase 3 Clinical Trial (A/B)	1	2013	4	2015
VAC BOT - Milestone C/LRIP	4	2013	4	2013

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
VAC BOT - Biological Licensure Application (BLA) Submission	2	2015	2	2015
VAC BOT - FDA Licensure	1	2017	1	2017
VAC BOT - Initial Operational Capability (IOC)	3	2017	3	2017
VAC BOT - Full Operational Capability (FOC)	3	2018	3	2018
VAC BOT - Ongoing Manufacturing, Testing Efforts/Regulatory	4	2015	4	2018
** VAC PLG - Phase 2 Clinical Trial	1	2012	3	2013
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy	3	2014	2	2016
VAC PLG - Process Development - Large Scale	1	2012	1	2012
VAC PLG - Consistency Lot Production	2	2012	1	2014
VAC PLG - Milestone C/LRIP	3	2014	3	2014
VAC PLG - Phase 3 Clinical Trial	4	2014	4	2016
VAC PLG - Biological Licensure Application (BLA) Submission	3	2017	3	2017
VAC PLG - FDA Licensure	2	2018	2	2018
** VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2012	4	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	-	2.336	9.642	55.087	-	55.087	58.342	57.675	47.340	28.759	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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) Advanced Anticonvulsant System (AAS), which consists of the drug midazolam in an autoinjector, to be used as a treatment for nerve agent-induced seizures and will replace the currently-fielded Convulsant Antidote for Nerve Agent (CANAs) autoinjector, which uses diazepam; (2) Bioscavenger, a new capability, to be used as a prophylaxis against nerve agents; 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) 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) AAS	2.026	0.000	0.000
<b>FY 2012 Accomplishments:</b> Completed process development and current Good Manufacturing Practices (cGMP) requirements.			
<b>Title:</b> 2) AAS	0.310	0.000	0.000
<b>FY 2012 Accomplishments:</b> Completed preparation of New Drug Application (NDA) for FDA submission; conduct Milestone C.			
<b>Title:</b> 3) BSCAV	0.000	1.545	0.000
<b>FY 2013 Plans:</b> Complete studies for alternative manufacturing technologies (NTA).			
<b>Title:</b> 4) BSCAV	0.000	1.923	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b><i>FY 2013 Plans:</i></b> Complete studies for a Post Exposure Prophylaxis (PEP) indication (NTA). <b><i>Title:</i></b> 5) BSCAV	0.000	4.674	11.972
<b><i>FY 2013 Plans:</i></b> Continue source selection activities for SDD contract award and re-establish a manufacturing line. <b><i>FY 2014 Plans:</i></b> Complete re-establishment of a manufacturing line and initiate small scale process qualification. <b><i>Title:</i></b> 6) BSCAV	0.000	1.500	5.980
<b><i>FY 2013 Plans:</i></b> Initiate source material storage and stability testing. <b><i>FY 2014 Plans:</i></b> Continue source material storage and stability testing. <b><i>Title:</i></b> 7) BSCAV	0.000	0.000	11.018
<b><i>FY 2014 Plans:</i></b> Initiate Pharmacokinetic (PK) and efficacy bioequivalence bridging studies, pivotal animal efficacy studies, and the Phase 2 clinical trial (NTA). <b><i>Title:</i></b> 8) BSCAV	0.000	0.000	22.368
<b><i>FY 2014 Plans:</i></b> Initiate Current Good Manufacturing Practice (cGMP) manufacturing and large scale process validation. <b><i>Title:</i></b> 9) INATS	0.000	0.000	3.749
<b><i>FY 2014 Plans:</i></b> Initiate oxime candidate Current Good manufacturing Practice (cGMP) manufacturing and large scale process validation and qualification. <b><i>Title:</i></b> 9) INATS	0.000	0.000	3.749
<b>Accomplishments/Planned Programs Subtotals</b>	2.336	9.642	55.087

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	0.000	4.466	8.951		8.951	2.500	0.000	0.000	0.000	0.000	15.917

**Remarks**

**D. Acquisition Strategy**

AAS

A prime 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 the program will conduct large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies. During the Production and Deployment Phase the program will purchase sufficient quantities of product to meet Initial Operational Capability (IOC) and Full Operational Capability (FOC). The Defense Logistics Agency will make subsequent purchases. The DoD is collaborating closely with the Department of Health and Human Services (HHS) with the development of midazolam for both civilian and DoD applications.

BSCAV

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

INATS

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>	<b>PROJECT</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>

During the Technology Development Phase, the INATS acquisition strategy has the Government serving as the system integrator directly overseeing completion of small-scale manufacturing, execution of nonclinical animal safety studies, submission of an Investigational New Drug (IND) application, and conduct of a Phase 1 clinical safety study. Following a successful Pre-EMD Review and Milestone B, the INATS program will continue to exercise management oversight in the System Development and Demonstration (SDD) Phase with system integration support from a commercial partner. Prior to FDA licensure, the commercial partner will perform a Phase 2 human clinical safety study toxicology and definitive animal efficacy studies for an improved oxime. The system integrator will also manufacture an improved formulation in an autoinjector delivery system. As part of a second line of effort, the INATS program will conduct nonclinical studies to obtain FDA approval for expand the indications for PB under task order vehicles. During the Production and Deployment Phase, the INATS program, in collaboration with the contracted system integrator, will pursue full rate and stockpile production as well as conduct any FDA-mandated post-marketing studies. After delivery of the Full Operational Capability quantities, the INATS program will transfer contracting and logistical responsibilities to the Defense Logistics Agency - Troop Support during the Operations and Support Phase.

**E. Performance Metrics**

N/A



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** AAS - HW S - cGMP Manufacturing Requirements	C/CPIF	Meridian Medical Technologies Inc.:Columbia, MD	3.931	1.545	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** BSCAV - HW C - Alternate Manufacturing	C/CPIF	PharmAthene Inc.:Annapolis, MD	0.000	0.000		1.051	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW C - Re-establish manufacturing line	C/CPFF	TBD:	0.000	0.000		3.281	Mar 2013	10.310	Dec 2013	-		10.310	Continuing	Continuing	0.000
HW S - cGMP Manufacturing and Process Validation	C/CPFF	TBD:	0.000	0.000		0.000		19.565	Mar 2014	-		19.565	Continuing	Continuing	0.000
<b>Subtotal</b>			3.931	1.545		4.332		29.875		0.000		29.875			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** AAS - ES S - Regulatory Integration and NDA Support Efforts	C/CPIF	Meridian Medical Technologies Inc.:Columbia, MD	1.293	0.310	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** BSCAV - ES S - Regulatory Support	MIPR	TBD:	0.000	0.000		0.300	Mar 2013	0.551	Mar 2014	-		0.551	Continuing	Continuing	0.000
** INATS - ILS S - Regulatory Support	PO	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.000		0.224	Jun 2014	-		0.224	Continuing	Continuing	0.000
<b>Subtotal</b>			1.293	0.310		0.300		0.775		0.000		0.775			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** BSCAV - OTHT S - PEP Studies	MIPR	Various:	0.000	0.000		1.685	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OTHT S - Stability Testing	C/CPIF	TBD:	0.000	0.000		1.586	Jun 2013	5.250	Jun 2014	-		5.250	Continuing	Continuing	0.000
OTHT S - Bioequivalence Bridging Studies	C/CPFF	TBD:	0.000	0.000		0.000		9.615	Mar 2014	-		9.615	Continuing	Continuing	0.000
** INATS - DTE S - cGMP Process Validation and Qualification	PO	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.000		2.565	Mar 2014	-		2.565	Continuing	Continuing	0.000
DTE S - GLP Animal Efficacy Studies	PO	Battelle Memorial Institute:Columbus, OH	0.000	0.000		0.000		0.815	Mar 2014	-		0.815	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		3.271		18.245		0.000		18.245			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** AAS - PM/MS S - Chem Bio Medical Systems	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.896	0.481	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
** BSCAV - PM/MS S - CBMS Management Support	Allot	JPM Chem/Bio Medical Systems (JPM CBMS):Fort Detrick, MD	0.000	0.000		0.745	Mar 2013	1.945	Mar 2014	-		1.945	Continuing	Continuing	0.000
PM/MS S - Product Management Support	SS/FFP	TBD:	0.000	0.000		0.629	Jun 2013	0.629	Jun 2014	-		0.629	Continuing	Continuing	0.000
PM/MS S - Product Management Support #2	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.215	Jun 2013	0.215	Jun 2014	-		0.215	Continuing	Continuing	0.000
PM/MS C - JPE Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD):Aberdeen Proving Ground, MD	0.000	0.000		0.150	Sep 2013	3.258	Sep 2014	-		3.258	Continuing	Continuing	0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Process development and cGMP Manufacturing Requirements																												
AAS - Milestone C																												
** BSCAV - Alternate Manufacturing Studies																												
BSCAV - Alternate Indication (PEP) Studies																												
BSCAV - Milestone B																												
BSCAV - Manufacturing & process qualification at small scale																												
BSCAV - cGMP Process Validation																												
BSCAV - Conduct PK and efficacy bridging studies																												
** INATS - Pre SDD Review																												
INATS - Milestone B																												
INATS - Large Scale Manufacturing																												
INATS - Milestone C																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> 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	2012	4	2012
AAS - Process development and cGMP Manufacturing Requirements	1	2012	2	2012
AAS - Milestone C	3	2013	3	2013
** BSCAV - Alternate Manufacturing Studies	1	2012	4	2013
BSCAV - Alternate Indication (PEP) Studies	1	2012	4	2013
BSCAV - Milestone B	4	2012	4	2012
BSCAV - Manufacturing & process qualification at small scale	1	2013	4	2013
BSCAV - cGMP Process Validation	1	2013	4	2013
BSCAV - Conduct PK and efficacy bridging studies	4	2013	1	2014
** INATS - Pre SDD Review	3	2013	3	2013
INATS - Milestone B	1	2014	1	2014
INATS - Large Scale Manufacturing	3	2014	1	2017
INATS - Milestone C	3	2018	3	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>	-	0.000	2.027	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.027
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

Operational forces have an immediate need to survive, safely operate, and sustain operations in a radiological/nuclear (R/N) threat environment across a continuum of global, contingency, special operations/low intensity conflict, homeland defense, and other high-risk missions.

Exposure to ionizing radiation causes acute radiation syndrome (ARS) which includes damage to blood-forming cells (hematopoietic system), gastrointestinal system, and central nervous system. Treatment of R/N casualties depends on effective use of multiple medical capabilities in an integrated manner. There are currently no FDA-approved prophylactic, therapeutic, or biodosimetry capabilities against ARS. Thus, this program supports the development of medical radiological countermeasures (MRADC) using a family-of-systems approach to provide a full spectrum medical capability including prophylactics, therapeutics, and biodosimetry to protect Warfighters against the radiation threat and to mitigate the medical consequences of exposure to ionizing radiation.

MRADC efforts include development of multiple countermeasures to prevent, limit, or reverse the myriad of injuries caused by exposure to radiation resulting in increased survival, decreased incapacity, and sustained operational effectiveness of U.S. Forces. In addition, MRADC will be effective against a broad range of ionizing radiation sources and types and will be useable throughout the full spectrum of healthcare operations.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) MRADC	0.000	2.027	0.000
<b>FY 2013 Plans:</b> Conduct animal efficacy studies to leverage Department of Health and Human Services (HHS) prototypes for DoD requirements.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	2.027	0.000

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

N/A

**Remarks**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>

**D. Acquisition Strategy**

MRADC

The DoD is synchronizing its investments and harmonizing its portfolio with the Department of Health and Human Services (HHS) which also has a radiation countermeasure program. DoD investments will focus on DoD-unique requirements. In support of the Integrated National Biodefense Portfolio, a Memorandum of Understanding (MOU) was established between HHS and DoD to prevent duplication of efforts and create synergies in the development of MRADC. In support of the MOU, the DoD will enter into Interagency Agreements (IAAs) with the Biomedical Advanced Research and Development Authority (BARDA), HHS' advanced developer, to promote the development of MRADC and the Strategic National Medical Radiation Countermeasures Portfolio. Each contract performer whose work is supported through these IAAs will sponsor its drug to the FDA and hold all approvals and or licenses. In accordance with the MRADC revised acquisition strategy, the DoD will harmonize DoD investments with HHS investments. The DoD will invest via IAAs in HHS prototypes focusing on DoD-unique requirements as HHS, in its role as the lead developer for the Technology Development phase in a whole-of-government approach, matures the prototypes to support a DoD down-select at Milestone B.

**E. Performance Metrics**

N/A





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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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

** MRADC - Animal Efficacy Studies	<div style="background-color: black; width: 100px; height: 15px; margin: 0 auto;"></div>
MRADC - Milestone B	<div style="background-color: black; width: 20px; height: 15px; margin: 0 auto;"></div>

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> MR5: <i>MEDICAL RADIOLOGICAL DEFENSE (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** MRADC - Animal Efficacy Studies	3	2013	4	2013
MRADC - Milestone B	1	2018	1	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TE5: <i>TEST &amp; EVALUATION (EMD)</i>	-	16.235	6.394	26.202	-	26.202	20.033	20.200	15.700	14.200	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This funding supports the Product Director, Test Equipment, Strategy, and Support (PD TESS) efforts. PD TESS provides test infrastructure products for testing and evaluating chemical and biological defense systems throughout the life cycle acquisition process. PD TESS test infrastructure products are aligned in four groups to include: (1) Chemical Laboratory (Sense); (2) Biological Laboratory (Sense); (3) Field Simulant Test (Sense); and (4) Individual Protection, Collective Protection and Decontamination (Shield and Sustain).

(1) Chemical Laboratory (Sense): The product for this area is the Dynamic Test Chamber (DTC) for chemical point sensors, and Non-Traditional Agent Defense Test System (NTADTS). The Dynamic Test Chamber provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The NTADTS provides a new capability at Edgewood Chemical Biological Center to conduct highly toxic material testing using new 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), Decon Family of Systems (DFoS), Joint Expeditionary Collective Protection (JECF), Joint Service Aircrew Mask - Fixed and Rotary Wing (JSAM-FW), (JSAM-RW), and Common Analytical Laboratory System (CALs).

(2) Sense Laboratory (Biological): The product for this area is the Whole System Live Agent Test (WSLAT) "Full System" Chamber and the Standoff Detection Test System (SDTS). The WSLAT "Full System" Chamber supports testing of all biological point detection systems in production configuration in biological live agent environments. The SDTS, as a new start, will provide test and evaluation capability for the Joint Standoff Detection System (JSDS) acquisition program. The CBD acquisition programs supported are the Joint Biological Point Detection System (JBPDS) and the Joint Biological Tactical Detection System (JBTDs).

(3) Field Simulant (Sense): The product for this area is a fully instrumented simulant Test Grid. The Test Grid effort provides a fully instrumented 20 km by 40 km field chemical and biological simulant test capability that integrates cloud tracking equipment; meteorological equipment; and test data network. The CBD acquisition programs supported are the Joint Expeditionary Collective Protection (JECF), Next Generation Chemical Detector (NGCD), Joint Biological Point Detection System (JBPDS) and the Joint Biological Tactical Detection System (JBTDs).

(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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>
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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), Joint Service Aircrew Mask Fixed Wing (JSAM FW) and Rotary Wing (JSAM RW), Joint Service Lightweight Integrated Suit Technology (JSLIST), and the Joint Service General Purpose Mask (JSGPM).

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

	FY 2012	FY 2013	FY 2014
<p><b>Title:</b> 1) PD TESS - Dynamic Test Chamber (DTC)</p> <p><b>FY 2012 Accomplishments:</b> Upgraded and initiated pre-validation.</p> <p><b>FY 2013 Plans:</b> Support upgrade and initiate validation of the DTC.</p> <p><b>FY 2014 Plans:</b> Support validation activities.</p>	0.134	0.170	0.100
<p><b>Title:</b> 2) PD TESS - Non-Traditional Agent Defense Test System (NTADTS)</p> <p><b>FY 2012 Accomplishments:</b> Initiated fabrication and installation.</p> <p><b>FY 2013 Plans:</b> Continue fabrication and installation. Initiate validation.</p> <p><b>FY 2014 Plans:</b> Complete validation, and test system commissioning.</p>	1.371	4.358	14.814
<p><b>Title:</b> 3) PD TESS - WSLAT</p> <p><b>FY 2012 Accomplishments:</b> Completed installation and completed verification and validation plan.</p>	2.020	0.000	0.000
<p><b>Title:</b> 4) PD TESS - Test Grid</p> <p><b>FY 2012 Accomplishments:</b> Conducted and studied dissemination, point and standoff referee systems. Performed characterization test and inserted bio referee equipment in the Test Grid network.</p> <p><b>FY 2013 Plans:</b> Initiate pre-verification activities.</p> <p><b>FY 2014 Plans:</b></p>	8.853	0.959	3.759

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Conduct verification, validation, and transition.			
<b>Title:</b> 5) PD TESS - Individual Protection Ensemble Mannequin System (IPEMS)	3.857	0.907	0.000
<b>FY 2012 Accomplishments:</b> Continued IPEMS chamber fabrication and installation. Continued mannequin fabrication.			
<b>FY 2013 Plans:</b> Complete chamber installation and verification. Accept mannequin.			
<b>Title:</b> 6) PD TESS - Standoff Detection Test System (SDTS)	0.000	0.000	7.529
<b>FY 2014 Plans:</b> Conduct analyses and initiate design.			
<b>Accomplishments/Planned Programs Subtotals</b>	16.235	6.394	26.202

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>	3.549	4.156	3.690		3.690	3.642	2.846	2.846	2.846	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

PD TESS

PD 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 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** PD TESS - HW S - DTC Fabrication/Installation	MIPR	Johns Hopkins University - Applied Physics Lab:Laurel, MD	3.974	0.000		0.100	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - WSLAT Chamber Fabrication/Installation	C/CPFF	Teledyne Brown Engineering Inc.:Huntsville, AL	11.433	1.080	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - WSLAT Design/ Fabrication/Installation	MIPR	Navy Operational Test and Eval Force (OPTEVFOR):Norfolk, VA	0.000	0.520	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - Test Grid Instrumentation/Data Network	MIPR	Dugway Proving Ground (DPG):Dugway, UT	1.010	1.175	Jun 2012	0.000		0.876	Mar 2014	-		0.876	Continuing	Continuing	0.000
HW S - Test Grid Instrumentation Data Network	C/CPFF	ITT Information Systems:Alexandria, VA	13.244	5.398	Jun 2012	0.000		2.040	Mar 2014	-		2.040	Continuing	Continuing	0.000
HWS - NTA Defense Test System Design/ Fabrication/Installation	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.100	Mar 2012	1.355	Mar 2013	2.805	Mar 2014	-		2.805	Continuing	Continuing	0.000
SW SB - IPEMS Mannequin System Fabricate/Install/Validate/ Verify	C/CPFF	MRIGlobal:Kansas City, MO	42.569	2.685	Mar 2012	0.532	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - IPEMS Design/ Fabrication/Installation	MIPR	Various:	0.000	0.180	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HW S - NTA Defense Test System Design, Fabrication, Install	C/CPFF	MRIGlobal:Kansas City, MO	0.000	0.918	Jun 2012	1.202	Mar 2013	9.000	Mar 2014	-		9.000	Continuing	Continuing	0.000
HW S - Standoff Detection Test System (SDTS) - Analyses and Design	Various	TBD:	0.000	0.000		0.000		6.000	Mar 2014	-		6.000	Continuing	Continuing	0.000
<b>Subtotal</b>			72.230	12.056		3.189		20.721		0.000		20.721			0.000



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - WSLAT Chamber Design/ Fabrication/Validation																												
PD TESS - IPE Mannequin Design, Build, Install																												
PD TESS - DTC - Pre-Validation																												
PD TESS - NTADTS - Design/Fabrication/ Installation																												
PD TESS - NTADTS Facility Upgrades and V&V for Next Class of Agents																												
PD TESS - Test Grid - Develop the Test Grid Biological Component and conduct characterization tests.																												
PD TESS - Standoff Detection Test System (SDTS) Fabrication/Installation																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	<b>PROJECT</b> TE5: <i>TEST &amp; EVALUATION (EMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** PD TESS - WSLAT Chamber Design/Fabrication/Validation	1	2012	3	2013
PD TESS - IPE Mannequin Design, Build, Install	1	2012	4	2013
PD TESS - DTC - Pre-Validation	1	2012	4	2013
PD TESS - NTADTS - Design/Fabrication/Installation	1	2012	4	2014
PD TESS - NTADTS Facility Upgrades and V&V for Next Class of Agents	4	2014	4	2018
PD TESS - Test Grid - Develop the Test Grid Biological Component and conduct characterization tests.	1	2012	4	2018
PD TESS - Standoff Detection Test System (SDTS) Fabrication/Installation	2	2014	4	2017

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	101.030	92.849	92.046	-	92.046	97.668	95.022	94.562	95.175	Continuing	Continuing
DT6: <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&amp;E MGT SUPPORT)</i>	-	3.933	4.314	4.849	-	4.849	4.992	5.151	5.255	5.414	Continuing	Continuing
DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>	-	54.466	57.648	54.870	-	54.870	56.768	52.865	53.042	52.904	Continuing	Continuing
LS6: <i>LABORATORY SUPPORT</i>	-	6.201	2.025	0.992	-	0.992	2.593	2.399	1.997	2.035	Continuing	Continuing
MS6: <i>RDT&amp;E MGT SUPPORT</i>	-	34.153	26.965	27.644	-	27.644	29.233	30.120	30.224	30.679	Continuing	Continuing
O49: <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>	-	2.277	1.897	3.691	-	3.691	4.082	4.487	4.044	4.143	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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

PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)*

Chemical and Biological Defense Program

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Chemical and Biological Defense Program DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**  
0400: *Research, Development, Test & Evaluation, Defense-Wide*  
BA 6: *RDT&E Management Support*

**R-1 ITEM NOMENCLATURE**  
PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)*

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.

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.

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 to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ATSD(NCB)), through the Deputy Assistant to the Secretary of Defense for Chemical Biological Defense and Chemical Demilitarization Programs (DATSD(CBD/CD)); funds management by the Defense Threat Reduction Agency (DTRA); integration of Joint requirements, management of training and doctrine by the Joint Requirements Office (JRO); Joint RDA planning, input to the Annual Report to Congress and Program Objective Memorandum (POM) development by the Program Analysis and Integration Office (PA&IO); review of Joint plans and the consolidated CB Defense POM Strategy by Army in its Executive Agent role.

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 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.

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 response to requirements received from the Services and the Combatant Commanders for already fielded equipment and systems.

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	92.806	92.849	94.721	-	94.721
Current President's Budget	101.030	92.849	92.046	-	92.046
Total Adjustments	8.224	0.000	-2.675	-	-2.675
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	9.500	0.000			
• SBIR/STTR Transfer	-1.276	0.000			
• Other Adjustments	0.000	0.000	-2.675	-	-2.675

**Change Summary Explanation**

Funding: Adjustments less than 10% of total program.

Schedule: N/A

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> DT6: <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&amp;E MGT SUPPORT)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DT6: <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&amp;E MGT SUPPORT)</i>	-	3.933	4.314	4.849	-	4.849	4.992	5.151	5.255	5.414	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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), 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) JRO DT	3.933	4.314	4.849
<b>FY 2012 Accomplishments:</b> Continued to support the revision and development of CBRN defense medical and physical sciences MTTPs. Continued to support the integration of CBRN defense considerations during the revision and development of selected Joint doctrine and JTTPs.			
<b>FY 2013 Plans:</b> Continue to support the revision and development of CBRN defense medical and physical sciences MTTPs. Continue to support the integration of CBRN defense considerations during the revision and development of selected Joint doctrine and JTTPs.			
<b>FY 2014 Plans:</b> Continue to support the revision and development of CBRN defense medical and physical sciences MTTPs. Continue to support the integration of CBRN defense considerations during the revision and development of selected Joint doctrine and JTTPs.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.933	4.314	4.849

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> DT6: <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&amp;E MGT SUPPORT)</i>

**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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>	-	54.466	57.648	54.870	-	54.870	56.768	52.865	53.042	52.904	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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.

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 (BSL) three test facility. Total institutional test operating costs are to be provided by the Service component.

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, and equipment 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) WDTC, MRTFB	37.406	34.213	36.836
<b>FY 2012 Accomplishments:</b> Maintained West Desert Test Center (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 required to support operations, which cannot be directly tied to a single test.			
<b>FY 2013 Plans:</b> Continue to maintain 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			

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
operations, range control, environmental oversight, workload management, and training. This represents the civilian labor required to support operations, which cannot be directly tied to a single test.  <b>FY 2014 Plans:</b> Continue to maintain 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 required to support operations, which cannot be directly tied to a single test.			
<b>Title:</b> 2) WDTC, MRTFB  <b>FY 2012 Accomplishments:</b> 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.  <b>FY 2013 Plans:</b> 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.  <b>FY 2014 Plans:</b> 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.	8.581	8.580	9.925
<b>Title:</b> 3) WDTC, MRTFB  <b>FY 2012 Accomplishments:</b> Provided WDTC with a dedicated and specially trained, 24-hour, support staff who operate and maintain all critical control systems, such as highly complex Heating, Ventilation, and Air Conditioning (HVAC) system, and decontamination systems within WDTC's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility Complex.  <b>FY 2013 Plans:</b> 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 system, and decontamination systems within WDTC's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility Complex.  <b>FY 2014 Plans:</b>	1.932	2.184	2.300

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>		<b>PROJECT</b> DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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 system, and decontamination systems within WDTC's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility Complex.				
<b>Title:</b> 4) WDTC, MRTFB		4.577	4.687	4.799
<b>FY 2012 Accomplishments:</b> 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.				
<b>FY 2013 Plans:</b> 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.				
<b>FY 2014 Plans:</b> 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.				
<b>Title:</b> 5) NTA TEST		1.970	7.984	1.010
<b>FY 2012 Accomplishments:</b> Provided initial phase of upgrade of current test capabilities to establish a Non-Traditional Agent (NTA) Developmental and Operational Test capability at WDTC, including tests to correlate agents to simulants performance, leveraging Science & Technology (S&T) for initial set of NTAs. Includes initiating instrumentation and methodology modifications for field Operational Testing with NTA simulants and for chamber Developmental Testing with initial NTAs: developing design and integration approaches for individual test fixtures and equipment for containment levels and surety operations; modify field test capability and referee systems to measure NTA simulants.				
<b>FY 2013 Plans:</b> Provides initial phase of upgrade of current test capabilities to establish a Non-Traditional Agent (NTA) Developmental and Operational Test capability at WDTC, including tests to correlate agents to simulants performance, leveraging Science & Technology (S&T) for initial set of NTAs. Includes initiating instrumentation and methodology modifications for field Operational Testing with NTA simulants and for chamber Developmental Testing with initial NTAs: developing design and integration approaches for individual test fixtures and equipment for containment levels and surety operations; modify field test capability and referee systems to measure NTA simulants.				
<b>FY 2014 Plans:</b>				

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Provides initial phase of upgrade of current test capabilities to establish a Non-Traditional Agent (NTA) Developmental and Operational Test capability at WDTC, including tests to correlate agents to simulants performance, leveraging Science & Technology (S&T) for initial set of NTAs. Includes initiating instrumentation and methodology modifications for field Operational Testing with NTA simulants and for chamber Developmental Testing with initial NTAs: developing design and integration approaches for individual test fixtures and equipment for containment levels and surety operations; modify field test capability and referee systems to measure NTA simulants.			
<b>Accomplishments/Planned Programs Subtotals</b>	54.466	57.648	54.870

**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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> LS6: <i>LABORATORY SUPPORT</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
LS6: <i>LABORATORY SUPPORT</i>	-	6.201	2.025	0.992	-	0.992	2.593	2.399	1.997	2.035	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project (LS6) provides for the maintenance and enhancement 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, 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) LABINF - Edgewood Chemical Biological Center Surety Facility Sustainment  <b>FY 2012 Accomplishments:</b> Performed general facility sustainment in key surety facilities. Includes general safety, structural, exterior, interior, and utility sustainment.  <b>FY 2013 Plans:</b> Perform general facility sustainment in key surety facilities. Includes general safety, structural, exterior, interior, and utility sustainment.  <b>FY 2014 Plans:</b> Perform general facility sustainment in key surety facilities. Includes general safety, structural, exterior, interior, and utility sustainment.	1.617	1.025	0.992
<b>Title:</b> 2) LABINF - Facility Operations, Sustainment, and Regulatory Compliance  <b>FY 2012 Accomplishments:</b> Provided laboratory infrastructure project upgrades for key systems to the current state-of-the-art capabilities. Key enabling activities to support the medical chemical and biological defense research and development infrastructure at U.S. Army Medical Research Institute of Infectious Disease (USAMRIID) and U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) include: support for veterinary medicine; regulatory affairs and quality assurance compliance activities; chemical	4.584	1.000	0.000

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
and biological surety costs; occupational health issues; maintenance of the vivarium; and maintenance of the neat (chemical) agent facility for medical countermeasure development.  <b><i>FY 2013 Plans:</i></b> Provides laboratory infrastructure project upgrades for key systems to the current state-of-the-art capabilities. Key enabling activities to support the medical chemical and biological defense research and development infrastructure at USAMRIID and USAMRICD include: support for veterinary medicine; regulatory affairs and quality assurance compliance activities; chemical and biological surety costs; occupational health issues; maintenance of the vivarium; and maintenance of the neat (chemical) agent facility for medical countermeasure development.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.201	2.025	0.992

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MS6: <i>RDT&amp;E MGT SUPPORT</i>	-	34.153	26.965	27.644	-	27.644	29.233	30.120	30.224	30.679	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This project provides management support for the DoD CBDP. It includes program oversight and integration of overall medical and non-medical programs by the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD(NCB)) defense programs through the Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense/Chemical Demilitarization (ODATSD(CBD/CD)). 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 and Services to improve CBRN defense related doctrine, education, training, and awareness by the Joint Requirements Office (JRO) 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 (PA&IO).

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 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 CBRN Defense 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 include fielded equipment assessments to ensure end to end feedback loops to support to the Warfighter.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) JRO MGT	5.066	9.421	9.563

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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<p><b><i>FY 2012 Accomplishments:</i></b> Continued to represent the Services and Combatant Commanders in the development, coordination, and integration of CBRN defense operational capabilities across all DoD mission areas. Continued to plan, coordinate and execute the development and review of: Joint CBRN defense capability requirements; DoD CBDP program guidance; Joint CBRN Defense Modernization Plan; Integrated medical and physical sciences CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities; Program Objective Memorandum; and the CBD Annual Report to Congress.</p> <p><b><i>FY 2013 Plans:</i></b> Represent the Services and Combatant Commanders in the development, coordination, and integration of CBRN defense operational capabilities across all DoD mission areas. Plan, coordinate and execute the development and review of: Joint CBRN defense capability requirements; DoD CBDP program guidance; Joint CBRN Defense Modernization Plan; Integrated medical and physical sciences CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities; Program Objective Memorandum; and the CBD Annual Report to Congress.</p> <p><b><i>FY 2014 Plans:</i></b> Continue to represent the Services and Combatant Commanders in the development, coordination, and integration of CBRN defense operational capabilities across all DoD mission areas. Continue to plan, coordinate and execute the development and review of: Joint CBRN defense capability requirements; DoD CBDP program guidance; Joint CBRN Defense Modernization Plan; Integrated medical and physical sciences CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities; Program Objective Memorandum; and the CBD Annual Report to Congress.</p>			
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<b><i>Title:</i></b> 2) JTIWG	5.659	5.589	6.117
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<p><b><i>FY 2012 Accomplishments:</i></b> Continued T&amp;E Executive mission support to ensure credible testing, T&amp;E Early Involvement, Fielded Equipment Assessments, T&amp;E Studies, evaluation and decision support for CBDP systems; supported the DOT&amp;E for OSD T&amp;E Oversight; and supported the Assistant to the Secretary of Defense (NCB) in infrastructure planning, input to the Program Objective Memorandum (POM) process, and establishing T&amp;E Standards to support the White House Subcommittee on Standards and other interagency groups. Continued direct support to the Joint Program Executive Office for Chemical Biological Radiological Nuclear Defense (JPEO-CBRND) and the JRO IPTs and ICTs providing technical assistance to structure acquisition programs, plan for Analysis of Alternatives (AoAs) and develop test scopes. Continued early involvement of the OTAs and other T&amp;E organizations in T&amp;E infrastructure planning, development, and validation. Continued development of threat test support documentation to support developmental and operational tests in which an operational threat must be realistically presented. Programs supported include NTA detector; Joint Biological Tactical Detection System (JBTDS); Joint Biological Point Detector System (JBPDS); Joint Chemical Agent Detector (JCAD); Improved Point Detection System (IPDS); Next Generation Chemical Detection (NGCD) and all detectors; Uniform Individual Protection Ensemble (UIPE); Dismounted Reconnaissance Sets, Kits, and Outfits (DR-SKO);</p>			
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PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)*

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> MS6: <i>RDT&amp;E MGT SUPPORT</i>
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**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2012	FY 2013	FY 2014
<p>Joint Expeditionary Collective Protection (JECF); Next Generation Diagnostic Systems (NGDS); Decontamination Decon Family of Systems (DFoS); JSGPM; JECF; NBCRV Sensor Suite Integration (SSI); JSAM; CALS; and WMD CSTs, Special Purpose Units - CB Equipment. Continued support to JPEO-CBD and JSTO-CB regarding specific test methodology and test technology needs, technology transition planning, approval of T&amp;E Strategies (TES), and participation in scientific review panels. Continued to provide guidance to improve the TES and TEMP for acquisition programs, threat support documentation, and validation of T&amp;E Capabilities and associated standards. Continued to support OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents. Continued to lead the International T&amp;E methodology development and standardization efforts to support the Australia, Canadian, UK, and US MOU. Provided T&amp;E infrastructure input to the POM process and support JRO, PA&amp;IO, and OASD(NCB/CB) in development and defense of POM and Budget submissions. Supported tri-lateral international CBD Exercises.</p> <p><b>FY 2013 Plans:</b> Continue T&amp;E Executive mission support to ensure credible testing, T&amp;E Early Involvement, Fielded Equipment Assessments, T&amp;E Studies, evaluation and decision support for CDBP systems; support the DOT&amp;E for OSD T&amp;E Oversight; and support the Assistant to the Secretary of Defense (NCB) in infrastructure planning, input to the Program Objective Memorandum (POM) process, and establishing T&amp;E Standards to support the White House Subcommittee on Standards and other interagency groups. Continue direct support to the Joint Program Executive Office for Chemical Biological Radiological Nuclear Defense (JPEO-CBRND) and the JRO IPTs and ICTs providing technical assistance to structure acquisition programs, plan for Analysis of Alternatives (AoAs) and develop test scopes. Continue early involvement of the OTAs and other T&amp;E organizations in T&amp;E infrastructure planning, development, and validation. Continue development of threat test support documentation to support developmental and operational tests in which an operational threat must be realistically presented. Programs supported include NTA detector; Joint Biological Tactical Detection System (JBTDSD); Joint Biological Point Detector System (JBPDSD); Joint Chemical Agent Detector (JCAD); Improved Point Detection System (IPDS); Next Generation Chemical Detection (NGCD) and all detectors; Uniform Individual Protection Ensemble (UIPE); Dismounted Reconnaissance Sets, Kits, and Outfits (DR-SKO); Joint Expeditionary Collective Protection (JECF); Next Generation Diagnostic Systems (NGDS); Decontamination Decon Family of Systems (DFoS); JSGPM; JECF; NBCRV Sensor Suite Integration (SSI); JSAM; CALS; and WMD CSTs, Special Purpose Units - CB Equipment. Continue support to JPEO-CBD and JSTO-CB regarding specific test methodology and test technology needs, technology transition planning, approval of T&amp;E Strategies (TES), and participation in scientific review panels. Continue to provide guidance to improve the TES and TEMP for acquisition programs, threat support documentation, and validation of T&amp;E Capabilities and associated standards. Continue to support OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents. Continue to lead the International T&amp;E methodology development and standardization efforts to support the Australia, Canadian, UK, and US MOU. Provide T&amp;E</p>			

PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)*

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> MS6: <i>RDT&amp;E MGT SUPPORT</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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infrastructure input to the POM process and support JRO, PA&IO, and OASD(NCB/CB) in development and defense of POM and Budget submissions. Support tri-lateral international CBD Exercises.

**FY 2014 Plans:**  
Continue T&E Executive mission support to ensure credible testing, T&E Early Involvement, Fielded Equipment Assessments, T&E Studies, evaluation and decision support for CBDP systems; support the DOT&E for OSD T&E Oversight; and support the Assistant to the Secretary of Defense (NCB) in infrastructure planning, input to the Program Objective Memorandum (POM) process, and establishing T&E Standards to support the White House Subcommittee on Standards and other interagency groups. Continue direct support to the Joint Program Executive Office for Chemical Biological Radiological Nuclear Defense (JPEO-CBRND) and the JRO IPTs and ICTs providing technical assistance to structure acquisition programs, plan for Analysis of Alternatives (AoAs) and develop test scopes. Continue early involvement of the OTAs and other T&E organizations in T&E infrastructure planning, development, and validation. Continue development of threat test support documentation to support developmental and operational tests in which an operational threat must be realistically presented. Programs supported include NTA detector; Joint Biological Tactical Detection System (JBTDSD); Joint Biological Point Detector System (JBPDSD); Joint Chemical Agent Detector (JCAD); Improved Point Detection System (IPDS); Next Generation Chemical Detection (NGCD) and all detectors; Uniform Individual Protection Ensemble (UIPE); Dismounted Reconnaissance Sets, Kits, and Outfits (DR-SKO); Joint Expeditionary Collective Protection (JECPP); Next Generation Diagnostic Systems (NGDS); Decontamination Decon Family of Systems (DFoS); JSGPM; JECPP; NBCRV Sensor Suite Integration (SSI); JSAM; CALS; and WMD CSTs, Special Purpose Units - CB Equipment. Continue support to JPEO-CBD and JSTO-CB regarding specific test methodology and test technology needs, technology transition planning, approval of T&E Strategies (TES), and participation in scientific review panels. Continue to provide guidance to improve the TES and TEMP for acquisition programs, threat support documentation, and validation of T&E Capabilities and associated standards. Continue to support OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents. Continue to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US MOU. Provide T&E infrastructure input to the POM process and support JRO, PA&IO, and OASD(NCB/CB) in development and defense of POM and Budget submissions. Support tri-lateral international CBD Exercises.

<b>Title:</b> 3) OSD MGT	17.176	6.039	5.996
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**FY 2012 Accomplishments:**  
Continued to perform program reviews/assessments, provided programmatic PPBE oversight/analysis, and provided congressional issue analysis and support. Continued to support financial management services provided by DTRA, such as funding distribution and execution reporting.

**FY 2013 Plans:**

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> MS6: <i>RDT&amp;E MGT SUPPORT</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
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.  <b>FY 2014 Plans:</b> 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.			
<b>Title:</b> 4) PAIO MGT  <b>FY 2012 Accomplishments:</b> Continued to develop assessments to support RDA Planning. Continued to provide analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Continued to respond to specialized evaluation studies throughout the PPBE process. Continued to provide JSCBIS database management.  <b>FY 2013 Plans:</b> 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.  <b>FY 2014 Plans:</b> 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.	6.252	5.916	5.968
<b>Accomplishments/Planned Programs Subtotals</b>	34.153	26.965	27.644

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

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
N/A

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

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> O49: <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
O49: <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>	-	2.277	1.897	3.691	-	3.691	4.082	4.487	4.044	4.143	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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 POM include: 1) Qualitative characterization of emerging CBRN threats and operational risk to the Joint Force; 2) Innovative approaches to deal with technical studies; 3) Concepts of operations for employing and developing capabilities; and 4) Analysis of specific issues to inform POM development.

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

<b>Title:</b> 1) JCDE	FY 2012	FY 2013	FY 2014
<b>FY 2012 Accomplishments:</b> Performed the limited objective experiment that explored the Concept of Operations in a Non-Traditional Agent Contaminated Area. Published the CJCS Guide to Non-Traditional Agents. Conducted multiple studies, including: OCONUS Fixed Site Protection Study, CWMD Force Structure Analysis Study, Biological Protective Posture Limited Objective Experiment, Response to Unforeseen Chemical Hazard Study and Response to Unforeseen Biological Hazard Study. Performed front end analysis on other than Vapor Hazard Experiments to develop a line of experiments, field trials, simulations and lab testing to deal with emerging hazards.	2.277	1.897	3.691
<b>FY 2013 Plans:</b> Continue to support labor costs for JCDE studies (\$1100K). Conduct Advanced Biological Threat Analysis (\$397K). Conduct Forcible Entry Seabase and Amphibious Operations Module 1 Experiment (\$400K).			
<b>FY 2014 Plans:</b>			

PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)*

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT)</i>	<b>PROJECT</b> O49: <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
Continue to support labor costs for JCDE studies (\$1241K). Continue to perform Other than Vapor Hazard Experiments (\$250K). Continue to perform Advanced Threat Analysis studies (\$250K). Continue to perform Elimination and Forcible Entry Modules studies (\$950K). Conduct studies on Biological Operational Risk Analysis (\$250K). Establish a Collaborative Architecture Warehouse (\$450K). Provide support in conducting POM analysis (\$300K).			
<b>Accomplishments/Planned Programs Subtotals</b>	2.277	1.897	3.691

**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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605502BP: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	15.675	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.675
SB6: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	-	15.675	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.675

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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)**

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	15.675	0.000	0.000	-	0.000
Total Adjustments	15.675	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	15.675	0.000			
• Other Adjustments	0.000	0.000	0.000	-	0.000

**Change Summary Explanation**

Funding: FY12 - Funding transferred and applied to SBIR program (+\$15,675K).

Schedule: N/A

Technical: N/A

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605502BP: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	<b>PROJECT</b> SB6: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
SB6: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	-	15.675	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.675
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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 CDBP 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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0605502BP: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	<b>PROJECT</b> SB6: <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>
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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 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>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) SBIR	15.675	0.000	0.000
<b>FY 2012 Accomplishments:</b> Small Business Innovative Research.			
<b>Accomplishments/Planned Programs Subtotals</b>	15.675	0.000	0.000

**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 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	17.837	14.745	13.026	-	13.026	28.553	33.602	33.128	27.628	Continuing	Continuing
CA7: <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>	-	0.000	0.000	0.000	-	0.000	3.000	5.000	5.000	5.000	Continuing	Continuing
CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>	-	0.000	0.000	1.819	-	1.819	2.006	1.981	1.981	1.981	Continuing	Continuing
IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>	-	0.000	0.000	0.500	-	0.500	2.501	1.490	1.490	1.490	Continuing	Continuing
IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	-	8.917	10.091	6.518	-	6.518	3.990	7.734	11.995	13.034	Continuing	Continuing
MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	-	5.371	0.498	0.499	-	0.499	13.414	14.551	9.816	3.277	Continuing	Continuing
TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>	-	3.549	4.156	3.690	-	3.690	3.642	2.846	2.846	2.846	Continuing	Continuing

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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).

Key efforts within this PE are in support of the FY14 policy priorities for Countering Biological Threats. Approximately \$.5M supports the priority to "Promote global health security efforts through building and improving international capacity to prevent, detect, and respond to infectious disease threats, whether caused by natural, accidental, or deliberate events." Approximately \$5.8M supports the priority to "Expand our capability to prevent, attribute, and apprehend those engaged in biological weapons proliferation or terrorism, with a focus on facilitating data sharing and knowledge discovery to improve integrated capabilities." Approximately \$.5M supports the priority to "Leverage science, technology, and innovation through domestic and international partnerships and agreements to improve global capacity to respond to and recover from biological incidents."

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	15.956	14.745	11.307	-	11.307
Current President's Budget	17.837	14.745	13.026	-	13.026
Total Adjustments	1.881	0.000	1.719	-	1.719
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.100	0.000			
• SBIR/STTR Transfer	-0.219	0.000			
• Other Adjustments	0.000	0.000	1.719	-	1.719

**Change Summary Explanation**

Funding: FY12

+\$ 2.100M Reprogrammings (IS7 +2.100K)

-\$ .219M SBIR/STTR Transfers (IS7 -\$94K; MB7 -\$77K; TE7 -\$48K)

FY14

+\$ 1.719M Reprogrammings (IS7 -100K; CM7 +\$1,819K)

Schedule: N/A

Technical: N/A



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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CA7: <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CA7: <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>	-	0.000	0.000	0.000	-	0.000	3.000	5.000	5.000	5.000	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

N/A - Future funds only.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>	-	0.000	0.000	1.819	-	1.819	2.006	1.981	1.981	1.981	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

The Weapons of Mass Destruction Civil Support Team (WMD CST) Program supports the 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 2012	FY 2013	FY 2014
<b>Title:</b> 1) WMD CST - System Engineering and Program Management	0.000	0.000	0.691
<b>Description:</b> 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).			
<b>FY 2014 Plans:</b> Provides System Engineering, technical control, and business management support of the COTS Life Cycle Management Program.			
<b>Title:</b> 2) WMD CST - Component Test and Evaluation	0.000	0.000	1.128
<b>Description:</b> 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.			
<b>FY 2014 Plans:</b> Conducts test and evaluation of CBRN COTS technology as part of the modernization strategy.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	1.819

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>

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

**Remarks**

**D. Acquisition Strategy**  
WMD CST

The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the ongoing system engineering assessment, validation, and modernization of both CBRN COTS and GOTS analytical detection, protection, decontamination and sampling capabilities fielded to the (57) WMD CST Teams in order to optimize/enhance their operational capabilities.

**E. Performance Metrics**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>
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<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** WMD CST - ES C - CBRN COTS	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.373	Mar 2014	-		0.373	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		0.373		0.000		0.373			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** WMD CST - OTHT C - CBRN COTS Component	C/FPIF	TBD:	0.000	0.000		0.000		1.128	Mar 2014	-		1.128	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		1.128		0.000		1.128			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** WMD CST - PM/MS SB - CBRN COTS	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.318	Mar 2014	-		0.318	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		0.318		0.000		0.318			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		0.000	0.000	0.000	1.819	0.000		1.819	0.000

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - Component Test and Evaluation	<div style="background-color: black; width: 100px; height: 15px; margin: 0 auto;"></div>
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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> CM7: <i>HOMELAND DEFENSE (OP SYS DEV)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** WMD CST - Component Test and Evaluation	2	2014	3	2014

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>	-	0.000	0.000	0.500	-	0.500	2.501	1.490	1.490	1.490	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

This Project provides for filter modernization and enhancements against Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs) and Non-Traditional Agents (NTAs). These upgrades will be provided for fielded Protection systems including Joint Service General Purpose Mask (JSGPM), Joint Service Aircrew Mask (JSAM) and Uniform Integrated Protection Ensemble (UIPE) to integrate respiratory and ocular protection.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) JSGPM	0.000	0.000	0.500
<b>FY 2014 Plans:</b> Developmental filter enhancement efforts for integration into currently and future fielded systems against TICs, TIMs and NTAs.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	0.500

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• JI0003: <i>JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)</i>	71.214	48.466	77.343		77.343	81.212	88.029	113.681	109.434	0.000	589.379

**Remarks**

**D. Acquisition Strategy**

JSGPM  
  
The JSGPM 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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>

**E. Performance Metrics**

N/A



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**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - HW C - System Filters	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.205	Dec 2013	-		0.205	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		0.205		0.000		0.205			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - ES C - System Filters	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.100	Dec 2013	-		0.100	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		0.100		0.000		0.100			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - DTE C - System Filters	MIPR	Edgewood Chemical Biological Center (ECBC):Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.160	Mar 2014	-		0.160	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.000		0.000		0.160		0.000		0.160			0.000

<b>Management Services (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JSGPM - PM/MS C - System Filters	MIPR	Edgewood Chemical Biological Center	0.000	0.000		0.000		0.035	Dec 2013	-		0.035	Continuing	Continuing	0.000





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IP7: <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSGPM - ARPI Integration Testing	2	2012	4	2012
JSGPM - TIC Filter TECH Transition	4	2012	4	2012
JSGPM - ARPI TD Contract Award	1	2013	1	2013
JSGPM - TIC Prototype Development (JSTO Technology 1)	2	2013	3	2014
JSGPM - TIC Filter Testing (JSTO Technology 1)	3	2014	1	2015
JSGPM - Prototype Development (JSTO Technology 2)	1	2015	4	2016
JSGPM - Prototype Testing (JSTO Technology 2)	1	2017	3	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	-	8.917	10.091	6.518	-	6.518	3.990	7.734	11.995	13.034	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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).

The Joint Effects Model (JEM) is the DoD's only accredited model that has been operationally tested and deemed effective for predicting hazards associated with the release of contaminants into the environment. JEM is being developed in separate increments and is capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents; high altitude releases, urban Nuclear Biological Chemical (NBC) environments; building interiors, and human performance degradation. Battle space commanders and first responders must have a Chemical, Biological, Radiological, Nuclear (CBRN) hazard prediction capability in order to make decisions that will minimize risks of CBRN contamination and enable them to continue mission operations. JEM operates in an integrated fashion with operational and tactical Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems, and in a standalone mode. JEM interfaces and communicates with the other programs such as JWARN, weather systems, intelligence systems, and various databases.

The Joint Warning and Reporting Network (JWARN) will provide the Joint Forces with a comprehensive Integrated Early Warning, Analysis and Response capability to minimize the effects of hostile CBRN attacks, as well as accidents and incidents. It will provide the operational capability to employ CBRN warning technology which will collect, analyze, identify, locate, report, and disseminate warnings. JWARN will be compatible and integrated with Joint Service C4ISR Systems. JWARN will transition from platform specific Common Operating Environment (COE) standards to a Web-based Service Oriented Architecture (SOA). JWARN will also provide an expansion of sensors that will connect to JWARN, increased automation of message handling, improved false alarm filtering, integration of route-planning calculator, and interoperability with additional command and control (C2) systems. JWARN will be located in Command and Control Centers at the appropriate level and will be employed by CBRN defense specialists and other designated personnel. This employment will transfer data automatically from existing and future sensors to provide commanders with the capability to support operational decision making in a CBRN environment. JWARN will provide additional data processing to support the production of plans and reports, and access to specific CBRN information to improve the efficiency of limited CBRN personnel assets. JWARN will integrate existing sensors into a sensor network or host C2 system, but does not provide the sensors that will be employed in the operating environment. The JWARN capability described above will be developed utilizing an incremental approach based on Service requirements and host system architecture.

The SSA is a CBDP enterprise-wide, user developmental support and service organization focusing on development assistance and net-centric interoperability. SSA provides the CBRN community with critical "plug and play" capabilities which allow for system modularity and re-configurability across the enterprise. SSA helps

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
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ensure that the various programs and projects are designing/adhering to DoD and industry standards to avoid proprietary/stove-pipe solutions. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

The SSA also directly supports various Bio-Surveillance efforts in training and logistics coordination. The SSA is re-baselining the entire IM/IT work-flow in support of the Bio-Surveillance Portal. By creating a catalog of portlets (think apps on a smart-phone) a user will be able to select the portlets that they need/use and will have access to data that is appropriate for them in a customizable format.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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<b>Title:</b> 1) JEM Command and Control (C2) Modernization Efforts	0.796	0.831	0.646
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**FY 2012 Accomplishments:**  
Upgraded fielded JEM software due to changing C2 host architectures, systems, and standards in order to remain relevant on required, interoperable platforms. Performed test and evaluation of updated JEM software baseline.

**FY 2013 Plans:**  
Continue efforts to upgrade fielded JEM software due to changing C2 host architectures, systems, and standards in order to remain relevant on required, interoperable platforms. Perform test and evaluation of updated JEM software baseline.

**FY 2014 Plans:**  
Continue efforts to upgrade fielded JEM software due to changing C2 host architectures, systems, and standards in order to remain relevant on required, interoperable platforms. Perform test and evaluation of updated JEM software baseline.

<b>Title:</b> 2) JEM Pre-Planned Product Improvement (P3I)	1.962	1.469	1.151
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**FY 2012 Accomplishments:**  
Developed, tested, and integrated previously fielded JEM software with science and technology upgrades and model enhancements to improve JEM accuracy and precision. Improved JEM architecture and overall performance through software updates and deficiency resolution.

**FY 2013 Plans:**  
Continue efforts 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 2014 Plans:**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>		<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue efforts 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.				
<p><b>Title:</b> 3) JWARN</p> <p><b>Description:</b> System Modernization/Update Development</p> <p><b>FY 2012 Accomplishments:</b> Initiated engineering and manufacturing development to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems.</p> <p><b>FY 2013 Plans:</b> Continue engineering and manufacturing development to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems.</p> <p><b>FY 2014 Plans:</b> Continue engineering and manufacturing development to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems.</p>		3.688	4.124	2.101
<p><b>Title:</b> 4) JWARN</p> <p><b>Description:</b> Program Management Support</p> <p><b>FY 2012 Accomplishments:</b> Performed program financial management, scheduling, planning and reporting support to modernization effort of JWARN.</p> <p><b>FY 2013 Plans:</b> Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort.</p> <p><b>FY 2014 Plans:</b> Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort.</p>		0.541	0.473	0.345
<p><b>Title:</b> 5) JWARN</p> <p><b>Description:</b> Test and Evaluation</p> <p><b>FY 2012 Accomplishments:</b> Initiated required government developmental testing on JWARN software updates and modernization efforts.</p> <p><b>FY 2013 Plans:</b></p>		0.737	1.336	0.776

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue required governmental developmental testing on JWARN software updates and modernization efforts. <b>FY 2014 Plans:</b> Continue required governmental developmental testing on JWARN software updates and modernization efforts.				
<b>Title:</b> 6) JWARN <b>Description:</b> Technical Support <b>FY 2012 Accomplishments:</b> Initiated engineering and technical support efforts to support JWARN modernization. <b>FY 2013 Plans:</b> Continue engineering and technical support for JWARN modernization efforts. <b>FY 2014 Plans:</b> Continue engineering and technical support for JWARN modernization efforts.		0.492	0.538	0.280
<b>Title:</b> 7) SSA Policies, Standards and Guidelines <b>FY 2012 Accomplishments:</b> Continued to provide Information Support Plans (ISP) development support for JPEO-CBD programs. Continued to provide Modeling and Simulation Accreditation Steering Group Support. Continued to provide guidance and support to JPEO-CBD programs ensuring compliance with Service Net Centric requirements. <b>FY 2013 Plans:</b> Provide ISP development support for JPEO-CBD programs and the Modeling and Simulation Accreditation Steering Group. <b>FY 2014 Plans:</b> Provide ISP development support for JPEO-CBD programs and the Modeling and Simulation Accreditation Steering Group.		0.172	0.273	0.252
<b>Title:</b> 8) SSA Integrated Architecture <b>FY 2012 Accomplishments:</b> Continued to provide and update program of record integrated architectures. Continued to provide Net-Centric Policy implementation assistance. Continued to support Common CBRN Sensor Interface (CCSI) updates. Continued to provide CCSI reference implementation. Continued support of enterprise tools and common capabilities to ensure relevance across CBRN programs. <b>FY 2013 Plans:</b>		0.162	0.271	0.251



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>		<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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. <b>FY 2014 Plans:</b> 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.				
<b>Title:</b> 9) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model <b>FY 2012 Accomplishments:</b> Continued to provide data model implementation guidance. Continued to develop and provide CBRN data model implementation guidance including reference implementation. Continued to analyze requirements and assist programs with implementation of the CBRN data model. Continued to support data model changes. Supported data model requirements for Bio-surveillance initiatives. <b>FY 2013 Plans:</b> Provide changes to CBRN data models. Support data model requirements for Bio-surveillance initiatives. <b>FY 2014 Plans:</b> Provide changes to CBRN data models. Support data model requirements for Bio-surveillance initiatives.		0.165	0.289	0.267
<b>Title:</b> 10) SSA Information Assurance <b>FY 2012 Accomplishments:</b> Provided Information Assurance Site Compliance Testing for JPEO-CBD. Continued to provide Information Assurance Certification/Acceptance products and services. <b>FY 2013 Plans:</b> Provide Information Assurance Site Compliance Testing for JPEO-CBD. Continue to provide Information Assurance Certification/Acceptance products and services. <b>FY 2014 Plans:</b> Provide Information Assurance Site Compliance Testing for JPEO-CBD. Continue to provide Information Assurance Certification/Acceptance products and services.		0.202	0.487	0.449
	<b>Accomplishments/Planned Programs Subtotals</b>	8.917	10.091	6.518

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>

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

N/A

**Remarks**

**D. Acquisition Strategy**

JEM

The program plans to award multiple development contracts in a competitive prototyping phase prior to downselecting a single JEM developer and integrator.

JWARN

JWARN Increment 2 will structure itself in conjunction with the JROC's IT Box concept. JWARN Increment 2 will incorporate all current and future technologies planned for incorporation into JWARN in their IS ICD. This will reduce future trips to the JROC for approval of improved capabilities and ultimately move the program away from incrementalization. Future JWARN development efforts will be acquired via a Request for Proposal (RFP) under full and open competition. Using full and open competitive procedures, a single contract will be awarded to the responsible offeror who provides the best value in maintaining current JWARN software and developing future JWARN software. This contract will apply a Cost-Plus-Award-Fee (CPAF) or Cost-Plus-Fixed-Fee (CPFF) pending results of discussion with the contracting office.

SSA

The SSA provides enterprise-wide services and coordination across all CBDP programs that contain data or software, or are capable of linking to the Global Information Grid (GIG). The SSA facilitates interoperability, integration, and supportability of existing and developing IT and National Security Systems (NSS). 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. (BA5 - System Development and Demonstration). 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. (BA7 - Operational Systems Development).

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - Software development	C/CPFF	Northrop Grumman Corp.:San Diego, CA	0.000	1.961	Mar 2012	1.652	Mar 2013	1.797	Mar 2014	-		1.797	Continuing	Continuing	0.000
** JWARN - SW S - JWARN - Manufacturing development	C/CPAF	Northrop Grumman Corp.:San Diego, CA	0.000	2.210	Mar 2012	2.625	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
HW S - JWARN - Manufacturing development	Various	TBD:	0.000	0.000		0.000		1.418	Jun 2014	-		1.418	Continuing	Continuing	0.000
** SSA - HW S - SSA - Development Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	1.002	0.000		0.478	Mar 2013	0.441	Mar 2014	-		0.441	Continuing	Continuing	0.000
<b>Subtotal</b>			1.002	4.171		4.755		3.656		0.000		3.656			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - ES SB - JEM Increment 1 - Software support	C/CPAF	Various:	0.000	0.797	Jun 2012	0.648	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** JWARN - TD/D SB - JWARN - Development support	MIPR	Various:	0.000	1.124	Mar 2012	1.336	Mar 2013	0.721	Mar 2014	-		0.721	Continuing	Continuing	0.000
** SSA - ES S - SSA - Develop Support Activities	MIPR	Space and Naval Warfare (SPAWAR) Systems Center:San Diego, CA	1.036	0.701	Mar 2012	0.313	Mar 2013	0.289	Mar 2014	-		0.289	Continuing	Continuing	0.000
<b>Subtotal</b>			1.036	2.622		2.297		1.010		0.000		1.010			0.000





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM - Production and Deployment	1	2012	4	2013
JEM - Operational Systems Development	1	2013	4	2017
JEM - Follow-on Test and Evaluation (GCCS-M)	3	2012	4	2012
JEM - Full Deployment Decision (GCCS-M)	1	2013	1	2013
JEM - Service C2 Systems Modernization & Upgrades	1	2012	2	2017
JEM - Analyst Support Requirements Definition Package (RDP) Build Decision (BD)	4	2015	4	2015
JEM - Emerging Capability Requirements Definition Package (RDP) Build Decision (BD)	1	2017	1	2017
JEM - Baseline Capability Requirements Definition Package (RDP) IOC	3	2015	3	2015
** JWARN - FOT&E - GCCS-M	3	2012	4	2012
JWARN - Production and Deployment	3	2012	4	2015
JWARN - Full Deployment Decision - GCCS-M	1	2013	1	2013
JWARN - Service C2 Systems Modernization and Upgrades	2	2013	4	2016
** SSA - Provide Enterprise Architecture Products and Services	1	2012	4	2018
SSA - Provide Information Assurance Site Compliance Testing	1	2012	4	2018
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2012	4	2018
SSA - Sustain CBRN Data Model	1	2012	4	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	-	5.371	0.498	0.499	-	0.499	13.414	14.551	9.816	3.277	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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).

JBAIDS is an evolutionary development program. 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 bacteria 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, e.g. Anthrax, Plague, Tularemia, Q-Fever, H5 Avian, Influenza A&B, etc. An expanded influenza detection panel covering six new assays was cleared on Sept 13, 2011. Additionally, the JBAIDS Platinum Path Extraction Kit (PPEK) Bridging Study contract was awarded on Oct 20, 2011; this will allow the PPEK to be used with the Anthrax, Plague, and Tularemia IVD kits. JBAIDS achieved full operational capability (340 systems delivered all Services) in July 2011. JBAIDS efforts in 2012-2015 will focus on adding new surveillance food and water pathogen detection assays. Also, the development team will focus on completing Pre-Emergency Use Authorization (Pre-EUA's) packages annually for FDA review. These operational development RDT&E funds will be used to oversee the configuration management of the system to include the conduct of software security information assurance (IA) updates on fielded software and monitor analyzer/laptop parts obsolescence.

The Next Generation Diagnostics System (NGDS) addresses the mission needs identified in the CBRN Field Analytics ICD (2010). The NGDS is envisioned to be 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 CBRN warfare threat identification and FDA-cleared diagnostics to inform individual patient treatment, CBRN situational awareness, and disease surveillance. NGDS Increment 1 Deployable Component will significantly improve diagnostic capabilities for deployable combat health support units (role 3) while also improving operational suitability and affordability. The NGDS Increment 1 Deployable Component is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. The NGDS Increment 1 Service Laboratory Component is intended to provide high throughput Biological threat identification, characterization and diagnostics to fixed site CONUS and OCONUS laboratories operated by the Army, Navy and Air Force in coordination with the Armed Forces Health Surveillance Center. NGDS Increment 2 is intended to provide advanced diagnostics for biological pathogens and toxins, diagnostics for chemical and radiological exposures and to provide capability to lower echelons of care.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Title:</b> 1) JBAIDS <b>FY 2012 Accomplishments:</b> Initiated development and integration of additional surveillance assays and diagnostic kits.	4.402	0.000	0.000
<b>Title:</b> 2) JBAIDS <b>FY 2012 Accomplishments:</b> Conducted annual Federal Information Security Management Act (FISMA) software compliance certifications and parts obsolescence. <b>FY 2013 Plans:</b> Conduct annual Federal Information Security Management Act (FISMA) software compliance certifications and parts obsolescence.	0.424	0.295	0.000
<b>Title:</b> 3) JBAIDS <b>FY 2012 Accomplishments:</b> Initiated Pre-Emergency Use Authorizations (EUA) packages to the FDA. <b>FY 2013 Plans:</b> Continue submission of Pre-Emergency Use Authorizations (EUA) packages to the FDA.	0.545	0.203	0.000
<b>Title:</b> 4) NGDS <b>FY 2014 Plans:</b> Continue annual Federal Information Security Management Act (FISMA) software compliance certifications and parts obsolescence.	0.000	0.000	0.295
<b>Title:</b> 5) NGDS <b>FY 2014 Plans:</b> Continue Pre-Emergency Use Authorizations (EUA) packages.	0.000	0.000	0.204
<b>Accomplishments/Planned Programs Subtotals</b>	5.371	0.498	0.499

**C. Other Program Funding Summary (\$ in Millions)**  
 N/A  
**Remarks**



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program	<b>DATE:</b> April 2013
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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**D. Acquisition Strategy**

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 plans 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) (e.g., Burkholderia, Rickettsia prowazekii and Smallpox diseases) that could be used as biological warfare threats to DoD military forces. A sole-source contract will be awarded to the JBAIDS prime contractor, Idaho Technology Inc., to replace laptops and software operating systems in numerous deployed JBAIDS worldwide due to parts obsolescence and unsupported Microsoft software (Microsoft XP Professional). JBAIDS FY14-18 funds transition under NGDS.

NGDS

The Next Generation Diagnostics System (NGDS) will develop and field an enhanced CBRN analytical and diagnostic system to the Joint force through an evolutionary acquisition strategy. NGDS Increment 1 Deployable Component will follow a developmental acquisition strategy to field Biological Warfare Agent diagnostic analytical devices. Additional DoD-unique BWA diagnostic and environmental surveillance capabilities will be added to the downselected platform capabilities. BA4 funds were used to conduct competitive prototyping and early operational assessments on the commercial hardware diagnostic systems immediately following MS A to support downselect to the final NGDS Increment 1 system.

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Chemical and Biological Defense Program** **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBAIDS - HW S - Assay development	C/FFP	Idaho Technology Inc.:Salt Lake City, UT	0.000	3.378	Sep 2012	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	3.378		0.000		0.000		0.000		0.000			0.000

<b>Support (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBAIDS - TD/D SB - Software Update & Parts Obsolescence	C/FFP	Idaho Technology Inc.:Salt Lake City, UT	0.000	0.325	Jul 2012	0.295	Jun 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NGDS - TD/D SB - Software Update & Parts Obsolescence	C/FFP	TBD:	0.000	0.000		0.000		0.295	Jun 2014	-		0.295	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.325		0.295		0.295		0.000		0.295			0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
** JBAIDS - OTHS - EUA packages	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID):Fort Detrick, MD	0.000	0.249	Mar 2012	0.203	Mar 2013	0.000		-		0.000	Continuing	Continuing	0.000
** NGDS - OTHS - EUA Packages	MIPR	Various:	0.000	0.000		0.000		0.204	Mar 2014	-		0.204	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	0.249		0.203		0.204		0.000		0.204			0.000





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JBAIDS - Pre-Emergency Use Authorization Packages	2	2012	4	2013
JBAIDS - Software compliance certification	2	2012	4	2013
JBAIDS - Surveillance Assays (Food & Water)	2	2012	4	2013
** NGDS - JBAIDS - Pre-Emergency Use Authorization Packages	1	2014	4	2016
NGDS - JBAIDS - Software compliance certification	1	2014	4	2016
NGDS - JBAIDS - Surveillance (Food & Water)	1	2014	3	2015
NGDS - JBAIDS - Replace/update laptops & operating systems	2	2015	4	2015

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>	-	3.549	4.156	3.690	-	3.690	3.642	2.846	2.846	2.846	Continuing	Continuing
Quantity of RDT&E Articles												

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

**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.

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

	FY 2012	FY 2013	FY 2014
<b>Title:</b> 1) WDTC - MRTFB - Life Sciences Test Facility	0.902	1.109	1.080
<b>FY 2012 Accomplishments:</b> Continued to provide upgrades of the Life Sciences Test Facility instrumentation and equipment at WDTC, in support of their CB defense mission. This is the only U.S. facility equipped to test with aerosolized Bio-Safety Level-3 (BSL-3) agents. Upgrades and technology enhancements included the following: (1) Regular replacement of aging Aerodynamic Particle Sizers with newer Fluorescent Aerodynamic Particle Sizers; (2) Full characterization of biological aerosols in various conditions out in the field; (3) An automated dry powder dissemination system that will vary the concentration of aerosols in test chambers and in the field; (4) Procure aerosol samplers for chamber and field tests; (5) Enhancing genotyping system and procure genotyping analysis software to determine genetic identity of biological samples; (6) Upgrade aerosol particle generation capabilities for standoff and point detector characterization; and (7) Procurement of microbiological laboratory equipment needed to fully utilize BSL-3 laboratories.			
<b>FY 2013 Plans:</b> Continues to provide instrumentation and equipment upgrades to Life Sciences Division LSTF at the WDTC, in support of the CB Defense mission. This is the only U.S. laboratory equipped to test for aerosolized bio-safety level-3 (BSL-3) agents. Upgrades and technology enhancements included: (1) Continued upgrade of aging Aerodynamic Particle Sizers (APS) with ultraviolet APS (UV-APS); (2) Outfitting of a second Aerosol Simulant Exposure Chamber (ASEC) for BSL-1 and BSL-2 testing; (3) Optical DNA Mapping System; (4) A Mass Spectrophotometer (Mass Spec) for enhanced identity determination of biological samples; and (5) Enhanced aerosol particle generation equipment for point-tactical-detector challenge.			
<b>FY 2014 Plans:</b> Continues to provide instrumentation and equipment upgrades to Life Sciences Division LSTF at the WDTC, in support of the CB Defense mission. This is the only U.S. laboratory equipped to test for aerosolized bio-safety level-3 (BSL-3) agents. Upgrades			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>		<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
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-NTA (advanced bio threat) and other simulatant samples. (3) Immunological identification system; and (4) Enhanced simulatant development capability.				
<b>Title:</b> 2) WDTC - MRTFB - Major Test Chambers		0.782	0.802	0.630
<p><b>FY 2012 Accomplishments:</b> 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 consisted of the following: (1) the Materiel Test Facility, 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 included: (1) Continued development of an aerosol generation and sampling capability; and (2) Characterization of improved and/or articulated testing fixtures; and (3) Continuous enhancement of Toxic Industrial Chemical detection and test capability; and (4) Non-Traditional Agent test and detection capability.</p> <p><b>FY 2013 Plans:</b> Continue 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 Materiel Test Facility, 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: (1) Development of an aerosol generation and sampling capability specifically for use with agent fate work; (2) Upgrades to aerosol chambers; (3) Upgrades to surety communications radio systems. These are multi-year efforts.</p> <p><b>FY 2014 Plans:</b> Continue 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 Materiel Test Facility, which is a unique test chamber where real-world</p>				

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**Exhibit R-2A, RDT&E Project Justification:** PB 2014 Chemical and Biological Defense Program **DATE:** April 2013

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2012	FY 2013	FY 2014
<p>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: (1) Continued development of the agent fate aerosol capability; (2) Upgrades to agent surety monitoring and analytical instrumentation for Building 3445 (3) SID recirculating bath upgrade; and (4) Upgrades to the Large scale filtration fixture to allow additional toxic agent and systems other than single pass filtration to be tested. and test capability; and (4) Non-Traditional Agent test and detection capability.</p> <p><b>Title:</b> 3) WDTC - MRTFB - CB Test Grid</p> <p><b>FY 2012 Accomplishments:</b> Continued to enhance existing instrumentation and equipment at multiple 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 C/ B and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. The upgrades below do not include the Product Director-Cross Commodity Advance Threats and Test Infrastructure (PD CCAT&amp;TI) Test Grid and Safari Instrumentation (TGSi) efforts. Continued modernization efforts included: (1) Development of NTA field simulants and monitoring equipment; (2) Increased Toxic Industrial Chemicals testing capability for both point and standoff referee systems; (3) Adding testing capability to support expanded use of Agent Like Organisms (ALOs); (4) Continuous update of field referee systems; and (5) Raptor management and control to support testing without affecting eagles and migratory birds.</p> <p><b>FY 2013 Plans:</b> Continues to enhance existing instrumentation and equipment at multiple 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 C/ B and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. The upgrades below do not include the PD CCAT&amp;TI TGSi efforts. Continuing modernization efforts will include: (1) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for additional field simulants; (2) Improve both point and standoff referee systems for Toxic Industrial Chemicals testing; (3) Adding testing capability to support expanded use of Agent Like Organisms (ALOs); (4) Required upgrade of referee systems (LIDAR, DIAL, etc.); (5) Wireless tracking system for test grid equipment; and (6) Development of transportable standoff chamber to allow remote calibration of active and passive standoff systems for improved test accuracy.</p> <p><b>FY 2014 Plans:</b> Continues to enhance existing instrumentation and equipment at multiple 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 C/ B and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological</p>	0.779	0.884	0.750



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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>and referee capability. The upgrades below do not include the PD CCAT&amp;TI TGSi efforts. 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) Upgraded high speed cameras; and (6) Development of in house capability to calibrate IR cameras to reduce cost and turnaround time.</p> <p><b>Title:</b> 4) WDTC - MRTFB - Combined Chemical Test Facility</p> <p><b>FY 2012 Accomplishments:</b>                      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 tested the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. This project upgraded analytical and field instrumentation with current technology to include: (1) Characterization of new and upgraded test fixtures; (2) Upgraded control systems for test fixtures; (3) Swatch, protective component, and detection testing capability; (4) Upgrade to CB Safari instrumentation in support of Navy ship collective protection test efforts; (5) Expanded test capabilities for large filter performance; and (6) Referee agent instrumentation.</p> <p><b>FY 2013 Plans:</b>                      Provides for continued revitalization and upgrade of existing instrumentation and equipment at the 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 upgrades current technology to include: (1) Characterization of new and upgraded test fixtures; (2) Upgraded control 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) Upgrade swatch test capability to include VX and other low volatility agents; (5) Chemical agent referee and analytical instrumentation; and (6) Improved automation for current chemical synthesis capability.</p> <p><b>FY 2014 Plans:</b>                      Provides for continued revitalization and upgrade of existing instrumentation and equipment at the 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 upgrades current technology to include: (1) Characterization of new and upgraded test fixtures; (2) Upgraded control 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) Validate 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.</p>	1.086	1.361	1.230
<b>Accomplishments/Planned Programs Subtotals</b>	3.549	4.156	3.690

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>

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

N/A

**Remarks**

**D. Acquisition Strategy**

T&E UPGRAD

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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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Chemical and Biological Defense Program		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0607384BP: <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	<b>PROJECT</b> TE7: <i>TEST &amp; EVALUATION (OP SYS DEV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, WDTC	1	2012	2	2016
T&E UPGRAD - Modernization of Major Test Chambers, WDTC	1	2012	4	2017
T&E UPGRAD - Enhance Instrumentation & Equip at Target S, Downwind, & Tower CB Test Grids, WDTC	1	2012	2	2016
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equip at Combined Chemical Test Facility, WDTC	1	2012	2	2016