Department of Defense
Fiscal Year (FY) 2012 Budget Estimates

February 2011

Chemical and Biological Defense Program

Justification Book Volume 4

Research, Development, Test & Evaluation, Defense-Wide

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Volume 4 Table of Contents

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Defense-Wide
FY 2012 President's Budget
Exhibit R-1 FY 2012 President's Budget
Total Obligational Authority
(Dollars in Thousands)

04 Feb 2011

Summary Recap of Budget Activities	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj*	FY 2011 OCO Request with CR Adj*	FY 2011 Total Request with CR Adj*	FY 2011 Annualized CR Base**	FY 2011 Annualized CR OCO**	FY 2011 Annualized CR Total**
Basic Research	63,796	49,508		49,508	49,421		49,421
Applied Research	233,443	169,287		169,287	168,988		168,988
Advanced Technology Development (ATD)	304,952	177,113		177,113	176,800		176,800
Advanced Component Development & Prototypes	248,298	277,062		277,062	276,572		276,572
System Development and Demonstration (SDD)	237,631	407,162		407,162	406,443		406,443
RDT&E Management Support	128,330	120,995		120,995	120,781		120,781
Operational Systems Development	6,089	6,634		6,634	6,622		6,622
Total Research, Development, Test & Evaluation	1,222,539	1,207,761		1,207,761	1,205,627		1,205,627
Summary Recap of FYDP Programs							
Research and Development	1,222,539	1,207,761		1,207,761	1,205,627		1,205,627
Total Research, Development, Test & Evaluation	1,222,539	1,207,761		1,207,761	1,205,627		1,205,627

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Summary Recap of Budget Activities	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Basic Research	52,617		52,617
Applied Research	219,873		219,873
Advanced Technology Development (ATD)	229,235		229,235
Advanced Component Development & Prototypes	261,143		261,143
System Development and Demonstration (SDD)	400,608		400,608
RDT&E Management Support	92,806		92,806
Operational Systems Development	15,956		15,956
Total Research, Development, Test & Evaluation	1,272,238		1,272,238

Summary Recap of FYDP Programs			
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Chemical and Biological Defense Program	1,222,539	1,207,761		1,207,761	1,205,627		1,205,627
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Appropriation: 0400D Research, Development, Test & Eval, DW

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7	0601384BP	Chemical and Biological Defense Program	01	63,796	49,508		49,508	49,421		49,421	U
		Basic Research		63,796	49,508		49,508	49,421		49,421	
17	0602384BP	Chemical and Biological Defense Program	02	233,443	169,287		169,287	168,988		168,988	U
		Applied Research		233,443	169,287		169,287	168,988		168,988	
39	0603384BP	Chemical and Biological Defense Program - Advanced Development	03	304,952	177,113		177,113	176,800		176,800	U
		Advanced Technology Development (ATD)		304,952	177,113		177,113	176,800		176,800	
86	0603884BP	Chemical and Biological Defense Program	04	248,298	277,062		277,062	276,572		276,572	U
		Advanced Component Development & Prototypes		248,298	277,062		277,062	276,572		276,572	
119	0604384BP	Chemical and Biological Defense Program	05	237,631	407,162		407,162	406,443		406,443	U
		System Development and Demonstration (SDD)		237,631	407,162		407,162	406,443		406,443	
153	0605384BP	Chemical and Biological Defense Program	06	113,354	120,995		120,995	120,781		120,781	U
154	0605502BP	Small Business Innovative Research - Chemical Biological Def	06	14,976							U
		RDT&E Management Support		128,330	120,995		120,995	120,781		120,781	

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		Operational Systems Development		6,089	6,634		6,634	6,622		6,622	
Total Research, Development, Test & Eval, DW				1,222,539	1,207,761		1,207,761	1,205,627		1,205,627	

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Master Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 01: Basic Research
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 02: Applied Research
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 03: Advanced Technology Development (ATD)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 05: Development & Demonstration (SDD)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 06: RDT&E Management Support
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Budget Activity 07: Operational Systems Development
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

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Master Program Element Table of Contents (Alphabetically by Program Element Title)

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Department of Defense Chemical and Biological Defense Program Overview

Fiscal Year (FY) 2012 Budget Estimate

The DoD Chemical and Biological Defense Program (CBDP) is a key part of a comprehensive national strategy to counter the threat, and mitigate the risk, of chemical, biological, and radiological (CBR) agents. The military mission is to dissuade, deter, defend, and defeat those who seek to harm the United States, its allies, and its partners through the threat or use of Weapons of Mass Destruction (WMD). The DoD CBDP funds research, development, and acquisition (RDA) of passive defense programs. These programs tailors countermeasures to the characteristics of the multiple CBR threats, including emerging agents. These capabilities provide U.S. forces the ability to rapidly and effectively mitigate the effects of a CBR attack used against our deployed forces and in the homeland.

The CBDP exploits advanced technologies to ensure U.S. forces are equipped with capabilities to defend against CBR threats through the far term. This FY 2012 budget includes support of a comprehensive science and technology (S&T) base to ensure we have the capabilities needed to protect our troops against current and future threats.

CBDP S&T research ensures U.S. technological advantages. The S&T portfolio includes; chemical and biological detection systems, advanced materials for improved filtration and protection systems, advanced decontaminants, information technologies, medical biological defense research for viral, bacterial, toxin, and emerging threat agents (including diagnostics, therapeutics, and vaccines), medical chemical defense (including pre-treatments and therapeutics for classical and Non-Traditional Agents (NTAs), and medical radiological defense research.

CBDP advanced development and acquisition efforts provide leading-edge tools that will enhance CBR defense capabilities for U.S. forces across the full spectrum of missions in the near-term through the far-term. Efforts within advanced development are structured to consolidate Joint and Service-unique requirements within the areas of contamination avoidance, force protection (individual and collective), decontamination, medical countermeasures, battlespace awareness, and consequence management.

Three key focus areas captured in the FY 2012 submission are the Medical Countermeasures Initiative (MCMI), the Transformational Medical Technologies (TMT) program, and efforts to enhance detection, medical countermeasures, decontamination, and protection capabilities against NTAs.

Beginning in FY 2012, the MCMI provides a dedicated, cost-effective, reliable, and sustainable MCM advanced development and flexible manufacturing capability that meets the warfighter and national security needs. This initiative was developed to address the President's "Reinventing the Medical Countermeasure Enterprise Initiative" announced during the 2010 State of the Union Address and comprises the DoD element of an interagency approach. The Department of Health and Human Services is concurrently planning to develop two advanced development and manufacturing facilities to address threats posed by the influenza virus. The DoD MCMI will provide the critical advanced development and flexible manufacturing capability necessary to field a rapid and flexible response for our warfighters, first responders, and civilian populations. 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 encompasses two major elements: a S&T component and an advanced development and manufacturing component. Each component will contain multiple initiatives. Efforts in the science and technology component would be concentrated in three areas: 1) novel platform/expression systems for MCMs, 2) advancement of regulatory science, and 3) advancements in flexible manufacturing technologies for MCMs. Efforts in the advanced development component would be in two areas: 1) further maturation of novel platform/expression systems and integration into a production process, and 2) establishment of a Technical Center of Excellence (TCE) comprised of an advanced development and flexible manufacturing capability.

In FY 2010, the Transformational Medical Technologies Initiative (TMTI) became the TMT program and continued efforts, underway within TMTI during FY 2010, are planned through FY 2011. Beginning in FY 2012, the TMT advanced development efforts will separate into four product lines: Hemorrhagic Fever Virus (HFV) Medical Countermeasures (MCMs) (e.g. Ebola virus), Intracellular Bacterial Pathogen (IBP) MCMs (e.g. Tularemia), Emerging Infectious Disease (EID) MCMs and enabling platform technologies. TMT aims to protect the Warfighter from emerging and genetically engineered biological threats, to include emerging infectious diseases, by providing a novel response capability from identification of pathogens to the development of MCM.

NTA enhancements provided in this submit continue to further efforts directed towards providing near-term capabilities to the Warfighter while at the same time addressing next generation capability needs. NTA capabilities are accomplished through an integrated portfolio process across the CBDP focusing on the enabling S&T, testing and the advanced development of detection, medical countermeasures, decontamination, and individual protection products.

New program starts for FY 2012 include: the Centrally Acting Nerve Agent Treatment System (CANATS) for treating the central nervous system following nerve agent intoxication, the MCMI, the Next Generation Diagnostic System, which will develop and field an enhanced common medical test equipment and diagnostic platform to replace the Joint Biological Agent Identification and Diagnostic System, and the Vaccine Special Immunization Program (VAC SIP), which conducts efforts to store and conduct required testing on Investigational New Drug (IND) vaccines used to investigate protection of lab workers in the SIP.

Contained within this FY 2012 budget estimate are efforts identified by the CBDP in support of the DoD Efficiency Initiatives. Outlined below are the CBDP's reductions in support of the DoD Efficiency Initiatives for FY 2012:

Budget Activity (BA) 4 - The Next Generation Chemical Standoff Detector (NGCSD) program was deferred as Service requirements/concepts for operation could not be met. The NGCSD was to provide early warning for both traditional and non-traditional chemical agent attacks at fixed sites, forward operating bases, and on Service designated vehicles and ships. CBDP will leverage on-going biological standoff science and technology efforts for potential application to chemical standoff in the future.

BA 4/5 - Product Director, Test, Equipment, Strategy, and Support (PD TESS) reductions associated with program changes and reductions.

BA 4 - CBRN Monitoring and Surveying Sets, Kits, and Outfits (MS SKO) planned new start was delayed by one year as requirements continue to be developed and refined. Risk will be mitigated with the CBRN Dismounted Reconnaissance Sets, Kits, and Outfits (DR SKO) and progress on the NTA rapid fielding initiative.

BA 4/5/7 - Major Defense Acquisition Program Support (MDAP SPT) efforts do not continue beyond FY 2011. The MDAP SPT program was established to integrate System of Systems (SoS) solutions for MDAPs, across the Armed Services, having Chemical and Biological Radiological and Nuclear (CBRN) survivability requirements. Individual MDAP requirements will be reviewed on a case-by-case basis to determine the most effective support methodology and will be worked in conjunction with CBRN programs of record whenever possible.

BA 4/5/7 - In support of the DoD Efficiency Initiatives, the Joint Program Executive Office reduced management support across the RDT&E Advanced Development portfolio by $6.0M in FY 2012.

Additional efficiencies are identified related to the DoD Efficiency Initiatives to reduce Service Support Contracts (SSCs). In FY 2012, the RDTE request is reduced by $20.2M to support greater efficiencies in SSCs. The Procurement request is reduced by $5.5M.

This FY 2012 budget estimate achieves a structured, executable, and integrated medical and non-medical joint CB Defense Program balanced to address national priorities. The CBDP balances urgent short-term procurement needs for securing the homeland against the long-term S&T needs required to mitigate future CBR attacks. The DoD CBDP remains committed to establishing the optimal balance between the near term requirement to field modernized equipment to the field, and the need to protect and replenish our far-term investment in technology.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*				R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	63.796	49.508	52.617	-	52.617	54.573	57.573	55.650	65.937	Continuing	Continuing
CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	33.630	31.041	-	-	-	-	-	-	-	0.000	64.671
CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*	7.968	-	-	-	-	-	-	-	-	0.000	7.968
IS1: *CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)*	-	-	2.259	-	2.259	2.382	2.433	2.478	2.900	Continuing	Continuing
LF1: *CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)*	-	-	24.838	-	24.838	25.197	26.751	27.246	30.906	Continuing	Continuing
PS1: *CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)*	-	-	18.064	-	18.064	18.055	19.455	19.816	23.200	Continuing	Continuing
TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*	15.246	14.352	7.456	-	7.456	8.939	8.934	6.110	8.931	Continuing	Continuing
TC1: *MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)*	6.027	3.144	-	-	-	-	-	-	-	0.000	9.171
TR1: *MEDICAL RADIOLOGICAL DEFENSE (BASIC RESEARCH)*	0.925	0.971	-	-	-	-	-	-	-	0.000	1.896

A. Mission Description and Budget Item Justification

This program element funds 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 the sciences 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

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	**R-1 ITEM NOMENCLATURE** PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

sponsors 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. The project names within this BA are changing in FY12 to reflect the research areas of Information Science (IS1), Life Science (LF1), and Physical Science (PS1), but retained is TB1, Transformational Medical Technologies. The projects of CB1, TC1, TR1, will no longer be used after FY11.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	78.764	49.508	52.024	-	52.024
Current President's Budget	63.796	49.508	52.617	-	52.617
Total Adjustments	-14.968	-	0.593	-	0.593
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.796	-			
• SBIR/STTR Transfer	-0.963	-			
• Other Adjustments	-12.209	-	0.593	-	0.593

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*		
Congressional Add: *In Vitro Models for Biodefense Vaccine*	1.484	-
Congressional Add: *Synchotron Beamline and Experimental Station*	3.217	-
Congressional Add: *Detection and Remediation of Bio/Chemical Weapons Programs*	1.992	-
Congressional Add: *Real Time Test Monitoring of Chemical Agents, Chemical Agent Stimulants and Toxic Industrial Chemicals (TICs)*	1.275	-
Congressional Add Subtotals for Project: CI1	7.968	-
Congressional Add Totals for all Projects	7.968	-

Change Summary Explanation

Funding: FY10 - Realignment of Congressional Adds to correct Budget Activity/Program Element (-$12,068K CI1; -$52K CB1); Program realignments to support CBDP and DoD program initiatives (-$1,209K CB1; +$624K TC1; -$1,211K TB1; -$89K TR1); SBIR Transfer (-$584K CB1; -$270K TB1; -$93K TC1; -$16K TR1).

FY12 - Adjustments less than 10% of total program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	**R-1 ITEM NOMENCLATURE** PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	33.630	31.041	-	-	-	-	-	-	-	0.000	64.671

A. Mission Description and Budget Item Justification

This project (CB1) supports basic research efforts in fundamental science phenomenology to include: life sciences; physical sciences; environmental sciences; mathematics; psychology and social sciences; and engineering. The objective of the Basic Research program is to successfully support the advancement of fundamental knowledge and understanding of the sciences with an emphasis on exploring new and innovative research for Chemical and Biological (CB) Defense. It includes new study areas, such as: nanoscale sciences; chemical, biological, and bio-inspired sciences; surface and signature sciences (with an emphasis on non-traditional agents (NTAs); and information sciences. The aim is to promote innovative concepts and directions of research, which could lead to transformational capabilities to enhance the performance and ensure the safety of the Warfighter. Research in nanoscale sciences (nanoelectromechanical systems, molecular motors, and nanometer imaging) may bring about improvements in protection, decontamination and other core CB defense fields. Research in chemical, biological, and bio-inspired sciences includes research in concepts such as synthetic biology, biomimetics, and other emerging areas of science to build a foundation for developing novel smart materials. This will combine multiple functionalities into a common autonomous unit or network. Surface and signature sciences focuses on the study of physical and chemical properties, especially with regard to NTAs, that seek to improve physical capabilities such as detection and decontamination. Informational Sciences includes research in understanding cognitive and physiological effects on human decision-making, behavior and performance, and modeling and simulation of CB threats. Breakthroughs and advances in functional capabilities gained from these scientific disciplines could impact the entire chemical and biological defense science and technology program. Basic research activities described in this budget justification leverage existing research programs and activities within the DoD and other government agencies to accelerate transformational breakthroughs, which may be transitioned to applied research or advanced development initiatives. Due to the exploratory, academic, and theoretical nature of basic research efforts, projects described in this justification typically have a duration period, from conception to completion, of three to five years. Promising basic research efforts will be further exploited for their application to chemical and biological defense in Budget Activity 2 (Applied Science). The basic research program promotes cross-pollination between government and academia, as well as sponsors world class scientists while promoting the development of young researchers.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Basic Research Core	10.982	8.341	-
Description: Chemical, Biological, and Bio-Inspired Science: Focuses on discovering fundamental phenomena that could impact chemical and biological defense. In FY12, all Chemical, Biological, and Bio-Inspired Science efforts are re-aligned to a new project within BA1 - Life Sciences Basic Research (LF1). ***FY 2010 Accomplishments:*** Continued research to investigate new hybrid nanomaterials that bridge nanoparticle and metallic surfaces to make biological interfaces, allowing for improved understanding of cellular reactions and responses to chemical and biological agents. Continued to characterize new mechanisms of reaction for these new materials. Began developing novel tools to investigate cells and			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
cell mechanisms. Characterized NTA toxicokinetic properties and mechanisms of toxicity for NTAs. Assessed effectiveness of developmental general purpose decontaminants and explored new formulations. Maintained visibility of relevant research which could be leveraged for the benefit of chemical and biological defense. ***FY 2011 Plans:*** Continue developing novel tools to investigate cells and cell mechanisms. Continue to investigate and leverage developments in bioscience, bio-inspired science, and chemical sciences to support and improve fundamental scientific understanding. Leverage and merge developments with other basic research areas such as information sciences and surface and signature sciences. Initiate efforts in response to identified science gaps.			
Title: 2) Basic Research Core ***Description:*** Information Science: Leverages new developments in information and computation to impact modeling and other chemical and biological defense efforts. In FY12, all Information Science efforts are re-aligned to a new project within BA1 - Information Sciences Basic Research (IS1). ***FY 2010 Accomplishments:*** Initiated efforts to investigate genetic algorithms. Sought to understand cognitive effects of heightened sensory input. Conducted research that drew from many disciplines, including: cognitive psychology; neuroscience; linguistics; medical sciences; and will leverage advances in physics, mathematics, biology, and other relevant sciences to improve informational and decision making tools. ***FY 2011 Plans:*** Continue investigating genetic algorithms and studying effects of heightened sensory input during chemical biological warfare events. Utilize efforts in information sciences to inform other areas of core chemical and biological defense programs, such as modeling and computational efforts.	5.694	6.000	-
Title: 3) Basic Research Core ***Description:*** Surface and Signature Sciences: The study of physical and chemical properties that seeks to improve physical capabilities, such as, detection and decontamination. In FY12, all Surface and Signature Sciences efforts are re-aligned to a new project within BA1 - Physical Sciences Basic Research (PS1). ***FY 2010 Accomplishments:*** Identified and exploited novel tools to investigate surface and signature sciences to inform capability gaps in fields such as detection and decontamination. Initiated and combined the efforts that improve the phenomenology needed to protect, detect,	8.225	8.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
decontaminate, or otherwise counter chemical (to include NTAs) and biological threats. Studied interactions of chemical and biological agents with biological and environmental matrices. ***FY 2011 Plans:*** Continue studying interactions of chemical and biological agents with biological and environmental matrices, and develop novel tools to investigate surface and signature sciences to address capability gaps. Study signature sciences and surface interactions.			
Title: 4) Basic Research Core ***Description:*** Nano-Scale Sciences: Improve understanding of nano-scale materials (scale of 1-100 nanometers in length) for use in chemical and biological defense. In FY12, all Nano-Scale Science efforts are re-aligned to a new project within BA1 - Physical Sciences Basic Research (PS1). ***FY 2010 Accomplishments:*** Completed study of selected compounds which mimic biological organisms and nano-scale sensing technologies for identification of agents. Continued investigations into new textiles with a higher resistance to oily substances or with adjustable porosity. Continued studying systems found in nature as part of a broad effort for creative solutions for future protection concepts. Completed initial exploration of interfaces between nanomaterials and living cells. Investigated new concepts in nano-scale chemical and biological sensing/detection. Initiated new studies to develop nano-scaled porous materials. Identified/leveraged state-of-the-art breakthroughs to fill capability gaps. ***FY 2011 Plans:*** Complete projects originating in FY09, including new textiles with a higher resistance to oily substances or with adjustable porosity efforts. Study interfaces between nano-materials and living cells, and study systems found in nature for creative solutions for future protection concepts. Advancements made in nano-scale sciences may apply to and be leveraged by other basic research areas such as biosciences and bio-inspired sciences, surface and signature science, informational science, and threat agent science (TAS) activities funded in Budget Activity 2.	8.729	8.700	-
Accomplishments/Planned Programs Subtotals	33.630	31.041	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	110.937	88.897	97.774		97.774	94.721	89.677	90.823	108.941	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CB3: *CHEMICAL BIOLOGICAL DEFENSE (ATD)*	26.964	15.410	23.818		23.818	30.514	37.806	38.139	38.586	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*	7.968	-	-	-	-	-	-	-	-	0.000	7.968

A. Mission Description and Budget Item Justification

The efforts listed in this project include congressional interest programs for FY10.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: In Vitro Models for Biodefense Vaccine ***FY 2010 Accomplishments:*** Developed improved vaccines to be used in the field to protect and save the lives of soldiers who might be exposed to airborne pathogens such as anthrax.	1.484	-
Congressional Add: Synchotron Beamline and Experimental Station ***FY 2010 Accomplishments:*** Built an experimental end-station at National Synchotron Light Source-II for the purpose of conducting basic research on the structure and processes of pathogens, toxins and their antidotes. Conducted research efforts on biological agents most likely to be used against our military by bioterrorists, including Staphylococcal Enterotoxin B and anthrax to determine the molecular structures of toxins, viruses, and bacteria.	3.217	-
Congressional Add: Detection and Remediation of Bio/Chemical Weapons Programs ***FY 2010 Accomplishments:*** Developed detection capability for chemical agents and chemical neutralization methods.	1.992	-
Congressional Add: Real Time Test Monitoring of Chemical Agents, Chemical Agent Stimulants and Toxic Industrial Chemicals (TICs) ***FY 2010 Accomplishments:*** Conducted a study on a semi-conducting metal oxide (SMO) nano-cluster array, within a standalone prototype footprint, to understand the array's ability to withstand outdoor operation while reliably and predictably detecting, identifying, and quantifying target TICs in real-time.	1.275	-
Congressional Adds Subtotals	7.968	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CI2: *CONGRESSIONAL INTEREST ITEMS (APPLIED RESEARCH)*	27.186	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	27.186
• CI3: *CONGRESSIONAL INTEREST ITEMS (ATD)*	30.172	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	30.172

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT IS1: *CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IS1: *CHEM/BIOLO DEFENSE - INFORMATION SCIENCES (BASIC RESEARCH)*	-	-	2.259	-	2.259	2.382	2.433	2.478	2.900	Continuing	Continuing

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 2010	FY 2011	FY 2012
Title: 1) Information Sciences Basic Research	-	-	2.259
Description: 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. ***FY 2012 Plans:*** Develop quantitative computational models for metabolic networks of pathogens which include interactions with host cell environments. Use computational models to identify interactions that are candidate targets for medical countermeasures.			
Accomplishments/Planned Programs Subtotals	-	-	2.259

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT LF1: *CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
LF1: *CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)*	-	-	24.838	-	24.838	25.197	26.751	27.246	30.906	Continuing	Continuing

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 2010	FY 2011	FY 2012
Title: 1) Life Sciences Basic Research	-	-	24.838
Description: 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. ***FY 2012 Plans:*** Elucidate 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. Examine polymicrobial interactions that may impact the growth of biological agents and/or their course of disease. Investigate immunological and physiological bases for tolerance to, or protection against, organophosphorous agents. Characterize the host response to ionizing radiation and mechanisms of injury. Study the evolution of viral and bacterial families at the genomic and phenotypic levels and characterize molecular signatures of virulence and/or manipulation in the laboratory (e.g., genetic modification and culturing.) Explore the mechanisms by which viruses modulate virulence and target host species. Understand mechanisms behind the functionality of biological systems. Explore novel techniques for the design and synthesis of biomimetic reagents for affinity and reactivity.			
Accomplishments/Planned Programs Subtotals	-	-	24.838

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT LF1: *CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT PS1: *CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
PS1: *CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)*	-	-	18.064	-	18.064	18.055	19.455	19.816	23.200	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project (PS1) advances fundamental scientific knowledge in physical science areas that include chemistry, physics, materials science, environmental sciences, and nanotechnology that could potentially lead to transformational CB defensive capabilities enhancing Warfighter performance and safety. Research results in physics, chemistry and materials sciences have potential application in point and standoff detection, as well as protection and decontamination. Surface and environmental sciences focus on the study of physical and chemical properties and phenomena of interactions, especially with regard to Non Traditional Agents (NTAs), that seek to improve capabilities such as detection, protection, and decontamination. Research in nanotechnology and nanoscale sciences, such as nanoelectromechanical systems, molecular motors, 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 2010	FY 2011	FY 2012
Title: 1) Physical Sciences Basic Research	-	-	18.064
Description: Physical Sciences Basic Research focuses on fundamental scientific phenomena including chemistry, physics, materials science, environmental science, and nanotechnology. ***FY 2012 Plans:*** Explore 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. Investigate advances in materials science that might ultimately contribute to enhanced protection and improved detection capabilities. Initiate studies in the design, synthesis, and fundamental understanding of novel materials for improved filtration and decontamination of chemical or biological threats. Initiate studies in spectroscopic methods, novel detection approaches, and materials science for detecting chemical or biological threats on surfaces. Initiate studies to improve fundamental understanding of fluidic behavior at the nanoscale, as well as new spectra for potentially improved point detection capabilities. Explore how computational chemistry and physics, including theoretical predictions of optical and THz signatures, might contribute to improved analytical methods and materials science.			
Accomplishments/Planned Programs Subtotals	-	-	18.064

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT PS1: *CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*	15.246	14.352	7.456	-	7.456	8.939	8.934	6.110	8.931	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project (TB1) funds basic research of vaccines, diagnostic tools, and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. Advance 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. Starting in FY10, all efforts were combined into a single capability area called Biological Based Basic Research.

This project also includes efforts such as the Transformational Medical Technologies Initiative (TMTI). Effective FY12 this effort is funded as the Transformational Medical Technologies (TMT) Program. The program was launched to respond to the threat of emerging or intentionally bioengineered 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 warfare (BW) 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 agents (e.g. developing new and innovative ways to mass produce drugs in the event of a biological incident). Through FY11 TB1 funded all ChemBio Medical Biological Basic Research efforts. Beginning in FY12, this project focuses solely on basic research in support of TMT.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Biological Based Basic Research	8.151	8.899	-
Description: Research to understand biological agents of interest, their pathways, virulence, immunization factors and identification. In FY12, all Biological Based Basic Research efforts are realigned to Life Sciences Basic Research (LF1). ***FY 2010 Accomplishments:*** Determined mechanisms of pathogenesis for viral and bacterial biothreat agents and toxins. Defined immune responses and mechanisms that confer protection against biothreat agents. Identified novel and/or shared antigens from viral and bacterial threat agents to be used in the design of future vaccine formulations. Determined the contribution of post-translational modification of Botulinum Neurotoxin (BoNT) to the intracellular biology of the toxin. Determined advanced pharmacokinetic models of BoNT intoxication to define the therapeutic window of opportunity. ***FY 2011 Plans:*** Conduct studies of pathogenic mechanisms for viral and bacterial biothreat agents and toxins. Clarify mechanisms of host-pathogen interaction to identify mechanisms of pathogenesis and/or correlates of protective immunity against biothreat agents. Define novel and/or shared antigens from viral and bacterial threat agents to be used in the design of future treatment options.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Define the contribution of post-translational modification to the structure and biology of BoNT. Research novel constructs for affinity reagents for the identification of biological warfare agents and biomarkers.			
Title: 2) Transformational Medical Technologies Initiative ***Description:*** Multiagent (Broad Spectrum) Medical Countermeasures: Basic research efforts focused on the early drug discovery phase of MCM development for biological threat agents. The goal is to identify and develop brand new compounds that could lead to successful therapeutic candidates. Projects will review scientific findings and assess a foundation for characterizing new therapeutics, use computer simulation or other virtual platforms to test hypotheses and begin research, data collection, and analysis to test hypotheses to explore alternative concepts, identify and evaluate critical technologies and components, and begin characterization of MCM candidates. ***FY 2010 Accomplishments:*** Initiated support for the discovery of conserved host and pathogen directed targets for the development of broad spectrum drugs against BW agents. Validated computer models and other methodologies for rational drug design. Initiated investigation of technological advancements in genetic sequencing and drugs based on protein-to-protein interactions. All successful and promising efforts will transition to BA2 during FY11.	5.258	-	-
Title: 3) Transformational Medical Technologies Initiative ***Description:*** 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 Discovery, Countermeasure Evaluation, and Bioinformatics. ***FY 2010 Accomplishments:*** Initiated the development of host and pathogen based platforms, such as cell, animal and computer models to describe and predict drug interactions during treatment for BW agent exposure. Initiated projects to generate animal models to characterize BW agent disease and to compare human and animal model responses to infection for use in live biological agent testing. Explored pathogen identification and characterization capabilities, which included genetic sequencing and integration of existing capabilities. Assessed future sequence and analysis needs to characterize advance threats. Determined bioinformatics infrastructure needs. ***FY 2011 Plans:***	1.837	5.453	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	**R-1 ITEM NOMENCLATURE** PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	**PROJECT** TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue to investigate new drug-based platforms which may be able to generate families of broad spectrum drugs to protect against bio-threat agents. Develop components to evaluate which technologies are appropriate for each aspect of the countermeasure development. Continue to support discovery of conserved host and pathogen directed targets for the development of broad spectrum drugs against BW agents. Continue to develop leading edge technologies to assist in pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation.			
Title: 4) Transformational Medical Technologies ***Description:*** 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 Discovery, Countermeasure Evaluation, and Bioinformatics. ***FY 2012 Plans:*** Continue efforts previously funded under the Transformational Medical Technologies Initiative. Continue to increase investment in the exploration of genetic approaches to describe host susceptibility to infectious disease and immune response. Investigate alternatives to animal models using markers of virulence, and therapeutic toxicity and efficacy. Assess developments in technologies for formulation and delivery of MCMs.	-	-	7.456
Accomplishments/Planned Programs Subtotals	15.246	14.352	7.456

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	54.858	43.858	84.747		84.747	85.493	76.011	52.527	75.583	Continuing	Continuing
• TB3: *MEDICAL BIOLOGICAL DEFENSE (ATD)*	196.007	115.233	172.636		172.636	180.913	167.900	149.413	148.398	Continuing	Continuing

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TC1: *MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TC1: *MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)*	6.027	3.144	-	-	-	-	-	-	-	0.000	9.171

A. Mission Description and Budget Item Justification

This project (TC1) emphasizes the understanding of the basic action mechanisms of nerve, blister, blood, and respiratory agents within the body. Basic studies are performed to delineate biological mechanisms for identified and emerging chemical threats to generate required information for initial design and synthesis of chemical medical countermeasures. Starting in FY10, all efforts were combined into a new capability area termed Chemical Based Basic Research.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Chemical Based Basic Research (CBBR)	6.027	3.144	-
Description: Research focuses on understanding chemical agents, their mechanism of action, toxicity, cellular injury, and identification. In FY12, all Chemical Based Basic Research efforts are re-aligned to a new project within BA1 - Life Sciences Basic Research (LF1). ***FY 2010 Accomplishments:*** Investigated new tissue engineering technologies to reduce reliance on skin grafts. Assessed the results of genotoxicity studies. Researched mechanisms of action of nerve agents and therapeutic interventions using whole animal models, with a focus on data required to support FDA submissions. Initiated research into the development for novel nerve agent therapeutics with reduced impact on visual performance. Initiated development of new animal models to characterize in vivo effects of Non-Traditional Agent (NTAs). Demonstrated the biological equivalency of NTA toxicity mechanisms across relevant species. ***FY 2011 Plans:*** Research pathways of molecular mechanisms of injury associated with chemical warfare agents. Conduct mechanistic studies using appropriate in vitro models to identify the biochemical cascade of effects following chemical agent exposure. Based on these studies, generate basic information for initial design and synthesis of medical countermeasures, located in Budget Activity 2, Project TC2.			
Accomplishments/Planned Programs Subtotals	6.027	3.144	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TC1: *MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*	38.644	33.648	36.546		36.546	36.993	37.789	38.163	39.395	Continuing	Continuing
• TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*	28.046	29.134	21.582		21.582	21.900	22.695	23.193	23.919	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TR1: *MEDICAL RADIOLOGICAL DEFENSE (BASIC RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TR1: *MEDICAL RADIOLOGICAL DEFENSE (BASIC RESEARCH)*	0.925	0.971	-	-	-	-	-	-	-	0.000	1.896

A. Mission Description and Budget Item Justification

This project (TR1) emphasizes the research and study of medical countermeasures to protect the Warfighter against radiation exposure. Specifically, this project identifies the basic action mechanisms of Acute Radiation Syndrome (ARS) and Delayed Effects of Acute Radiation Exposure (DEARE), as well as, develops possible radioprotectants (Pretreatments), post-irradiation exposure treatments (Therapeutics), and the ability to identify exposure to radiation (Diagnostics). These Basic Research efforts advance promising technology with the potential to rapidly identify, diagnose, prevent, and mitigate ARS and/or DEARE in the event of a radiological incident.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Medical Radiological Defense	0.925	0.971	-
Description: Research focuses on understanding mechanisms of injury from radiation exposure. In FY12, all Medical Radiological Defense efforts are re-aligned to a new project with BA1 - Life Sciences Basic Research (LF1). ***FY 2010 Accomplishments:*** Initiated efforts to identify mechanisms of injury from acute radiation exposure and delayed health effects following radiation exposure. Explored novel assays to diagnose radiation injury, through studies of cellular science, metabolism, and bioregulators. ***FY 2011 Plans:*** Continue projects begun in FY10 to understand cellular and molecular responses to ionizing radiation and identify biomarkers of radiation exposure.			
Accomplishments/Planned Programs Subtotals	0.925	0.971	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*	1.818	2.884	0.806		0.806	0.605	0.603	0.379	0.335	Continuing	Continuing
	4.086	0.957	0.000		0.000	0.200	0.200	0.434	0.484	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601384BP: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	PROJECT TR1: *MEDICAL RADIOLOGICAL DEFENSE (BASIC RESEARCH)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*											

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	233.443	169.287	219.873	-	219.873	217.812	204.080	181.892	224.254	Continuing	Continuing
CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	110.937	88.897	97.774	-	97.774	94.721	89.677	90.823	108.941	Continuing	Continuing
CI2: *CONGRESSIONAL INTEREST ITEMS (APPLIED RESEARCH)*	27.186	-	-	-	-	-	-	-	-	0.000	27.186
TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	54.858	43.858	84.747	-	84.747	85.493	76.011	52.527	75.583	Continuing	Continuing
TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*	38.644	33.648	36.546	-	36.546	36.993	37.789	38.163	39.395	Continuing	Continuing
TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*	1.818	2.884	0.806	-	0.806	0.605	0.603	0.379	0.335	Continuing	Continuing

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 focuses on development of antidotes, drug treatments, casualty diagnosis, patient decontamination and medical technologies management. In the physical sciences area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection technologies. 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. This PE also provides for applied research in the areas of real-time sensing and immediate biological countermeasures. The work in this PE is consistent with the Chemical Biological Defense Program Research Development and Acquisition (RDA) Plan. Efforts under this PE transition to or provide risk reduction for Advanced Technology Development (PE: 0603384BP), Advanced Component Development and Prototypes (PE: 0603884BP) and System Development and Demonstration (PE: 0604384BP).

BA2 reductions in support of the DoD Efficiency Initiatives for FY12 include: Service Support Contracts reduced (-$7.626M).

Efforts included in this Program Element address non-system specific development, directed toward military needs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	224.830	169.287	189.340	-	189.340
Current President's Budget	233.443	169.287	219.873	-	219.873
Total Adjustments	8.613	-	30.533	-	30.533
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	1.076	-			
• SBIR/STTR Transfer	-2.749	-			
• Other Adjustments	10.286	-	30.533	-	30.533

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: CI2: *CONGRESSIONAL INTEREST ITEMS (APPLIED RESEARCH)*		
Congressional Add: *Chem/Bio IR Detection System*	1.892	-
Congressional Add: *HyperAcute Vaccine Development*	3.585	-
Congressional Add: *Chemical Agent Fate Appropriate Response Tool*	1.593	-
Congressional Add: *Botulinum Neurotoxin Research*	1.992	-
Congressional Add: *Miniaturized Chemical Detector for Chemical Warfare Protection (ChemPen)*	1.593	-
Congressional Add: *Chemical and Biological Resistant Clothing*	1.593	-
Congressional Add: *Botulinum Toxin Treatment Therapy*	0.797	-
Congressional Add: *PaintShield for Protecting People from Microbial Threats*	1.992	-
Congressional Add: *Mismatch Repair Derived Antibody Medicines to Treat Staphylococcus-derived Bioweapons*	0.996	-
Congressional Add: *Advanced Development of Antiviral Prophylaxis and Therapeutics*	2.987	-
Congressional Add: *Potent Human Monocolonal Antibodies Against BoNT, A, B and E (Botulinum Neurotoxins) Suited for Mass Production and Treatment of Large Populations*	0.996	-
Congressional Add: *Countermeasures to Chemical and Biological Controls-Rapid Response*	2.788	-
Congressional Add: *MEMS Sensors for Real-time Sensing of Weaponized Pathogens*	1.992	-
Congressional Add: *Mobile Rapid Response Prototype*	2.390	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Congressional Add Subtotals for Project: CI2	27.186	-
Congressional Add Totals for all Projects	27.186	-

Change Summary Explanation

Funding: FY10 - Adjustments less than 10% of total program.

FY12 - Program realignments to support high priority CBDP and DoD program initiatives (+$1.069K CB2; +$36,958K TB2; +$1,541K TC2; -$1,071K TR2); Economic assumptions (-$148K CB2; -$134K TB2; -$55K TC2; -$1K TB2); Reductions to Service Support Contracts in support of the DoD Efficiency Initiatives (-$3,389K CB2; -$2,943K TB2; -$1,267K TC2; -$27K TR2).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	110.937	88.897	97.774	-	97.774	94.721	89.677	90.823	108.941	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project (CB2) provides physical 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, including specific research to develop defensive capabilities against non-traditional agents (NTAs). Starting in FY11, all NTA-dedicated research will be re-aligned into specific capability areas within this project in order to ensure a focused effort on this high priority area. Capability areas in this project include: detection; detection for NTAs; information systems technology; protection/hazard mitigation; protection/hazard mitigation for NTAs; threat agent science; and threat agent science for NTAs. 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, pathogenicity and the development of simulants, especially with regard to NTAs. This project focuses on horizontal integration of CB defensive technologies in support of the Joint Services.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Protection & Hazard Mitigation	1.185	-	0.345
Description: 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. ***FY 2010 Accomplishments:*** Investigated alternate system solutions and technologies for Collective Protection (COLPRO). Technologies included micro fine detoxifying aerosol fogs to facilitate entry and mitigate cross contamination into the COLPRO system, internal self-detoxifying surfaces for walls and ductwork, expedient retrofit kits, self-detoxifying and expedient strippable coatings, rapid isolation and purge schemes, and novel and innovative air flow and re-circulation schemes. ***FY 2012 Plans:*** Continuation of Innovative Systems Concepts and Analysis projects from FY10. Transition research effort "Reactive Airlock for Armored Vehicles, Shipboard and Shelter Applications."			
Title: 2) Protection & Hazard Mitigation	7.081	1.546	1.829

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Lightweight Integrated Fabric: Development of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform. ***FY 2010 Accomplishments:*** Supported assessment of integrated fabric concurrent with the Individual Protection Advanced Technology Demonstration (IP Demo - see Budget Activity 3, Project TT3, Experiment and Technology Demonstrations), which supports the Uniform Integrated Protection Ensemble (UIPE) and incorporated lessons into further development of integrated fabric. Continued work on fabric residual life indicators and agent indicators that can be network enabled. Continued development of polymer membranes with permeability properties electrically controlled. Continued development of novel sorbents leap-ahead improvements over activated carbon technologies. Continued development work on ultra light and tactile barrier materials for gloves and boots. Continued development and scaling of nanofiber/textile production technologies. Continued fabrication and testing of prototype integrated fabrics to determine protection, mechanical properties, and heat transfer characteristics. Continued use of computational methods for assessment and refinement of prototypes. Continued ensemble design conceptual work based on lessons gathered in the human performance project. Continued support of fabrication of prototype ensembles for evaluation and demonstration. ***FY 2011 Plans:*** Incorporate lessons learned from the Individual Protection Advanced Technology Demonstration (see TT3 E&TD), which will support the Lightweight CB Ensemble (LCBE), and incorporate lessons into further development of integrated fabric. Complete work on network-enabled fabric agent indicators. Continue development work on ultra light and tactile barrier materials for gloves and boots and continue fabrication and testing of prototype integrated fabrics to determine protection, mechanical properties, and heat transfer characteristics. Continue development and scaling of nanofiber/textile production technologies for transition to Uniform Integrated Protection Ensemble (UIPE) and/or Joint Service Lightweight Integrated Suit Technology (JSLIST) program. Continue use of computational methods for assessment and refinement of prototypes. Continue development of ensemble design conceptual work based on lessons gathered in the human performance project for transition to UIPE/JSLIST. ***FY 2012 Plans:*** Continue 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 prototypes; develop improved thermal modeling simulations. Develop and scale an advanced adsorbent nanofiber/textile production technology and/or a "smart material" technology for possible transition to a UIPE program. Continue development of ensemble design conceptual work based on the lessons gathered in the human performance projects for transition to UIPE/JSLIST.			
Title: 3) Protection & Hazard Mitigation	6.354	3.528	4.005

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: 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. ***FY 2010 Accomplishments:*** Supported assessment of integrated fabric concurrent with the Individual Protection Advanced Technology Demonstration, which supports the Uniform Integrated Protective Ensemble (UIPE), and incorporated lessons into further development of low resistance/profile filtration. Continued project to develop the next generation filter that provides individual protection from chemical and biological (CB) agents, Toxic Industrial Chemicals (TICs) and Non Traditional Agents (NTAs). Integrated metal-organic frameworks and other novel adsorbent into "breadboard" prototypes. Integrated nanofiber High Efficiency Particulate Air (HEPA) filters into "breadboard" prototypes. Continued reactive hybrid approaches for individual protection filtration. Developed and fabricated initial prototypes and evaluated performance. Initiated prototype work for collective protection filtration in support of advanced development programs such as the Joint Expeditionary Collective Protection (JECP) and supported collective protection in vehicular/platform systems. ***FY 2011 Plans:*** Incorporate lessons learned from the Individual Protection Advanced Technology Demonstration, which will support the Uniform Integrated Protective Ensemble (UIPE), and incorporate lessons into further development of low resistance/profile filtration. Continue project to develop the next generation filter for individual protection from CB agents, TICs and NTAs. Integrate metal-organic frameworks and other novel adsorbent into "breadboard" prototypes. Integrate nanofiber HEPA filters into breadboard prototypes. Continue reactive hybrid approaches for individual protection filtration and evaluate performance. As a result of the IP Demo, refine prototype concept filters to advanced development programs such as the Joint Service General Purpose Mask (JSGPM), Joint Service Aircrew Mask (JSAM), UIPE programs, improved media for collective protection filters in Joint Expeditionary Collective Protection (JECP), and in support of collective protection in vehicular/platform systems. ***FY 2012 Plans:*** Continue development of low resistance/profile filtration. Continue project to develop the next generation novel filtration media for individual protection from CB agents and TICs (NTAs are addressed in Protection & Hazard Mitigation NTA). Transition these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. Integrate metal-organic frameworks and other novel adsorbent into "system" prototypes. Integrate nanofiber HEPA filters into system prototypes. Continue reactive hybrid approaches for individual protection filtration and evaluate performance.			
Title: 4) Protection & Hazard Mitigation	2.118	0.711	0.484

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: 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. ***FY 2010 Accomplishments:*** Supported assessment of integrated fabric concurrent with the Individual Protection Advanced Technology Demonstration, which supports the Uniform Integrated Protective Ensemble (UIPE), and incorporated lessons into further development of human performance prediction and assessment. Continued refining human performance parameters for various Warfighter subgroups in the performance of their mission when CB protective systems are employed. Continued work to develop an overall comfort and performance model for CB protective equipment. Initiated anthropometric sizing study to support size tariff development. ***FY 2011 Plans:*** Incorporate lessons learned from the Individual Protection Advanced Technology Demonstration, which will support the Uniform Integrated Protective Ensemble (UIPE), and incorporate lessons into further development of human performance prediction and assessment. Complete human performance model for CB protective equipment. As a result of the IP Demo, transition model data and analysis to individual protection advanced development programs. Continue anthropometric sizing study to support size tariff development. ***FY 2012 Plans:*** Continue development of human performance prediction and assessment by investigating the interactive effects of competing burdens on human cognitive performance. Studies will be conducted to quantify the cumulative effects of the two primary factors researched to date: thermal burden (via moisture vapor transport rate) and breathing resistance. Transition data on Human Performance Assessment that will allow the prediction and design of individual protective gear.			
Title: 5) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2010 Accomplishments:*** Supported assessment of integrated fabric concurrent with the Individual Protection Advanced Technology Demonstration, which supported the Uniform Integrated Protective Ensemble (UIPE), and incorporated lessons learned into further development of a low-burden air purifying respirator. Continued to define the key development parameters associated with respiratory protective systems and incorporated data and lessons from the human performance project. Continued integration analysis with	2.115	2.590	2.591

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
ground Warfighter helmet systems. Completed integration work on the dual-cavity respirator. Continued to refine and fabricate prototypes and evaluate performance. ***FY 2011 Plans:*** Incorporate lessons learned from the Individual Protection Advanced Technology Demonstration, which will support the Uniform Integrated Protective Ensemble (UIPE), and incorporate lessons into further development of a low-burden air purifying respirator. Complete the assessment of the key development parameters associated with respiratory protective systems and incorporate data and lessons from the human performance project. Incorporate lessons learned from the IP Demonstration into protective mask prototypes. Complete integration analysis with ground Warfighter helmet systems. Continue to integrate work on the dual-cavity respirator concepts into the final design. ***FY 2012 Plans:*** Continue development of a low-burden air purifying respirator. Advanced concept CBRN technologies will be 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 will be integrated into prototype helmets. Work will focus 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.			
Title: 6) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2010 Accomplishments:*** Completed development and analysis of prototypes of energetic, reactive, media-less, air purification technologies that reduce size, weight, and lifecycle costs of removing chemical and biological agents and toxic industrial chemicals (TICs) from both make-up and re-circulation air in buildings, shelters, or platforms. Completed development of an acoustic fractionator that removes particulates down to the submicron level using standing sound waves. Continued development of a new air purification technology based on selective ionization and contaminant extraction. Completed development of a novel, low pressure drop, HEPA filter, which provides increased dust capacity and extended filter life through the use of irregularly shaped high surface area submicron fibers. ***FY 2011 Plans:***	2.419	1.937	0.966

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue development of reactive membrane and regenerative post treatment media technologies for applications in building protection and vehicular/platform systems for Major Defense Acquisition Programs (MDAP). ***FY 2012 Plans:*** Continue development of reactive membrane and regenerative post treatment media technologies for applications in building protection and vehicular/platform systems.			
Title: 7) Protection & Hazard Mitigation ***Description:*** General Purpose Formulations for Decontamination: Development and improvement of chemical and biological decontamination formulations that are compatible with the current family of decontamination systems. ***FY 2010 Accomplishments:*** Continued solid oxidant and green surfactant efforts resulting from alternative process research that emphasize dual-use technologies. Initiated focused enzymatic decontamination approaches. ***FY 2011 Plans:*** Complete development, testing and transition of solid oxidant and green surfactant to support advanced development programs such as the Hazard Mitigation for Material and Equipment Restoration (HaMMER) Advanced Technology Demonstration (see Budget Activity 3, Project TT3, Experiment & Technology Demonstrations), also known as the Decontamination Family of Systems Demonstration. Continue focused enzymatic decontamination development. ***FY 2012 Plans:*** Continue focused enzymatic decontamination development. Complete study and transition data on agent fate of contaminated human remains and transition to the Human Remains Decontamination System program.	1.956	2.830	1.561
Title: 8) Protection & Hazard Mitigation ***Description:*** Decontamination Family-of-Systems (DFoS): Development and analysis of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. ***FY 2010 Accomplishments:*** Completed development of self-detoxifying coatings, agent disclosure spray efforts, and strippable coating efforts and transitioned products in advanced development programs such as the Hazard Mitigation for Material and Equipment Restoration (HaMMER) Advanced Technology Demonstration. Continued investigation of microwave interaction with coating embedded particles	2.677	4.348	5.012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
and functionalities for directed energy decontamination. Completed work on functionalized photocatalytic materials. Initiated formulation development of a Decontamination Family of Systems that allowed optimized formulation adjustment at point-of-use. ***FY 2011 Plans:*** Develop data to define performance envelop of system components and transition to HaMMER. Initiate a study on impact of application methods of decontaminants to complex surfaces. ***FY 2012 Plans:*** Transition mature DFoS technologies including reactive coatings; continue developing other promising technologies. Continue the optimization of decontamination applicators. Continue investigation of microwave interaction with coating embedded particles and functionalities for directed energy decontamination. Coatings efforts will also examine durable and temporary coatings that pursue reactive and barrier options. Continue studies on effect of delivery and application methods on decontamination efficacy on complex surfaces.			
Title: 9) Protection & Hazard Mitigation ***Description:*** Smart Hazard Mitigation: Development of decontamination technologies that sense, respond (decontaminate) and signal in the presence of chemical and biological contamination. ***FY 2010 Accomplishments:*** Completed feasibility studies on the use of surface-modified nanoporous beads as encapsulation delivery devices for decontaminants. Continued development of molecular switches that respond and react to the presence of CB agents and signal results. Initiated development of rotaxane chemistry as artificial tunable G and V receptors that sense and react to chemical agents. ***FY 2011 Plans:*** Continue development of molecular switches that respond and react to the presence of CB agents and signal results. Continue development of rotaxane chemistry as artificial tunable G and V receptors that sense and react to chemical and biological agents. ***FY 2012 Plans:*** Continue development of molecular switches that respond and react to the presence of CB agents and signal results. Continue development of rotaxane chemistry as artificial tunable G and V receptors that sense and react to chemical and biological agents. Conduct comparative analysis/technology readiness assessment of smart system candidate technologies to select candidates for further development.	1.873	1.388	1.477
Title: 10) Protection and Hazard Mitigation	3.366	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Novel Threat Agent Assessment and Methods: Focuses on Non-Traditional Agent hazard, permeation, and quantification of the hazard as it pertains to developing protective and hazard mitigation technologies. In FY11, all NTA efforts are re-aligned to Protection and Hazard Mitigation NTA capability area within this Project. ***FY 2010 Accomplishments:*** Initiated methodology development for assessment and quantification of (1) percutaneous hazards from permeation of liquid NTAs. Initiated methodology development for assessment and quantification, and (2) decontamination contact hazard residuals of NTAs. Baselined methodologies for current filtration, barrier materials, and textile effectiveness against NTAs. Continued efforts to assess and predict NTA performance on military chemical warfare agent (CWA) adsorbents.			
Title: 11) Protection and Hazard Mitigation NTA ***Description:*** NTA Air Purification: Study and assessment of filter technologies. ***FY 2011 Plans:*** Complete assessment of military carbon against NTAs, including performance when exposed to battlefield contaminants such as petroleum, oil, lubricants, and sweat. Develop and test novel materials to improve performance against NTAs. Provide results for upgrades into developmental programs. ***FY 2012 Plans:*** Continue development and testing of novel materials to improve performance against NTAs. Materials explored will include crystalline nano-porous framework materials, catalytic, nano-fibrous, and composite materials.	-	2.280	1.024
Title: 12) Protection & Hazard Mitigation NTA ***Description:*** NTA Percutaneous Protection: Study and assessment of protective technologies. ***FY 2011 Plans:*** Develop technologies to improve overall protective clothing performance against NTAs. Develop and assess improved ensemble closures and evaluate current individual protective (IP) barrier materials. Develop component aerosol test methods for performance standards of IP ensembles. Modify and verify material swatch test methods for liquid and aerosol for performance standards of IP materials. Develop breathable aerosol barrier materials and self-detoxifying fabrics. Develop and evaluate improved barrier materials for protective gloves and boots. Complete assessment of expedient approaches and skin barrier treatments. Develop and test performance enhancements that improve material agent resistance and garment closure performance. ***FY 2012 Plans:***	-	2.996	2.591

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue development of technologies to improve overall protective clothing performance against NTAs. Perform 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. Design and test novel closures in accordance with modeling results/predictions. Fabricate prototype systems and then test/measure their aerosol performance.			
Title: 13) Protection & Hazard Mitigation NTA ***Description:*** NTA Decontamination: Study and assessment of decontamination technologies. ***FY 2011 Plans:*** Assess performance of current and developmental decontamination technologies against NTAs. Develop decontamination technologies and formulations that are optimized against NTAs. Modify and verify test procedures for NTAs. Develop and test decontamination formulations and system-of-systems approaches that improve performance against NTAs and manage process residuals. ***FY 2012 Plans:*** Continue development of decontamination technologies against NTAs. Continue to develop decontamination technologies and formulations that are optimized against NTAs. Continue development and test decontamination formulations and system-of-systems approaches that improve performance against NTAs and manage process residuals, including effluent control. Continue development of durable and temporary, reactive and barrier coatings to mitigate NTA contamination.	-	3.124	2.367
Title: 14) Threat Agent Science ***Description:*** 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. ***FY 2010 Accomplishments:*** Refined and standardized exposure and analytical methods for evaluation of percutaneous exposure to selected low volatility CWAs and high priority NTAs. Assessed established contact and inhalation hazard methodologies for applicability to next-generation chemical warfare agents and refined as evaluation indicates. Set milestones and began research on hazard assessment for more chemical agents. Completed development of exposure and analytic methods for selected very low volatile chemical threat agents. Completed studies and published report on human health risk assessment exposure standard for medical applications associated with contact hazards of low volatility CWAs. Expanded previous toxicokinetic and toxicodynamic efforts on a representative spore-forming Biological Warfare Agent (BWA) to include other BWAs, both spore-forming and non spore-	13.922	0.085	1.517

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
forming. Assessed the validity of expanding the viral agents model. Investigated human toxicity operational contact hazard assessment, and the effects of alternate toxicological pathways on the overall physiological impacts of high priority NTAs. ***FY 2011 Plans:*** Continue research efforts on BWA toxicokinetic and toxicodynamic modeling. All NTA-related efforts re-aligned to Threat Agent Science NTA within this Project. ***FY 2012 Plans:*** Expand research efforts on BWA toxicokinetic and toxicodynamic modeling for specific priority viral agents. Investigate potential reservoir hosts for biological agents. Other work will improve understanding of bioavailability following dermal exposures for chemical agents, as well as study in vitro and in vivo binding of agents and analogues. Identification of toxicity of decontamination breakdown products may inform development of decontamination technologies.			
Title: 15) Threat Agent Science ***Description:*** Agent Fate: Characterizes fate of chemical and biological material on operationally relevant surfaces; information obtained from the study of particular agents will be used in core programs to support development of detection capabilities, information systems, including hazard prediction tools, and protection and hazard mitigation activities. In FY12, all Agent Fate efforts realigned to Agent Characterization within this budget project (CB2). ***FY 2010 Accomplishments:*** Leveraged prior agent fate studies to better bound substrate characteristics, and began to relate agent-substrate interactions for highly variable substrates, such as concrete, sand/soil, and asphalt, and transfer data to predictive models. Characterized effects of substrate composition and structure on persistence and degradation of high priority CWAs and NTAs. Accelerated Agent Fate work on operationally relevant surfaces for highest priority NTAs. Related CWA and NTA adsorption/absorption to chemical properties of both agent and substrate. Characterized vapor and liquid phase transport of high priority CWAs and NTAs through porous and non-porous operationally relevant substrates. Continued studies to determine effects of environmental factors (such as wind, humidity, substrate hydration and temperature) on transport through and off of substrates. Transferred data to predictive models. Refined Droplet Reaction and Evaporation of Agents Model (DREAM), which helps predict evaporation rates of agents from various surfaces, to address variation in program output. Transitioned DREAM modules to defense acquisition programs. Developed NTA hazard models and estimated hazard with extended skin-surface contact. Transitioned data to JEM. ***FY 2011 Plans:*** Utilize empirical data to inform prediction of persistence and degradation of select CWAs and BWAs; transition data to JEM. Characterize interaction between biological agents and environmental surfaces, including the impact of ambient conditions (e.g., temperature, relative humidity) and mechanical disturbances.	7.276	0.079	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
All NTA-related efforts re-aligned to Threat Agent Science NTA within this Project.			
Title: 16) Threat Agent Science ***Description:*** Accelerating Agent Sciences: Accelerates CB defense research and development by coupling computational methods and experimental approaches. In FY11, all NTA-related efforts are re-aligned to Threat Agent Science NTA within this Project. ***FY 2010 Accomplishments:*** Integrated research in computational techniques with existing computational toxicology, such as, shape signatures, and existing molecular dynamics capabilities to enhance agent fate, physiological response, simulant experiments and predictive modeling. Initiated work providing near term benefits, such as, computational toxicology. Completed CWA Quantum Chemical Modeling (QCM) development and maturation capability baseline for CWA interactions. Applied Quantum Chemical Modeling to develop and accelerate computationally obtained datasets and Quantitative Structure-Activity Relationships (QSAR) derived from the QCM data to highest priority NTA interactions and toxicology.	3.671	-	-
Title: 17) Threat Agent Science ***Description:*** 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 aerosol and particulate agent dissemination; examining the fundamental mechanisms that contribute to BWAs persistence and transport; understanding the fundamental interactions between agents and substrates; investigating aqueous transport of agents and the underlying mechanisms of binding CB agents onto hydrated surfaces; advancing the understanding of fundamental interactions between agents and substrates; and identifying agent decomposition products harmful to military personnel. In FY12, this area will include research formerly performed under Agent Fate. ***FY 2010 Accomplishments:*** Capitalized on previous research to characterize highest priority CWA and NTA chemistry based on structure, physicochemical properties, and molecular interactions. Leveraged prior work to better understand BWA genomic variation as related to preparation methodologies and environmental stresses. Improved sampling methods and agent simulant correlation studies by leveraging established BWA standard characterization and preparation techniques. Transitioned CWA, BWA and NTA simulant selection process and test protocols to support T&E applications and defined the operational envelopes of simulants through the	6.519	0.095	3.025

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
acquisition life cycle. Expanded the scope of simulant development to accelerate delivery of characteristics and simulants for highest priority NTAs. Addressed critical characterization work on highest priority NTAs. ***FY 2011 Plans:*** Continue BWA research to improve understanding of the relationship of genotype variations on organism virulence, infectivity, and persistence. Sustain efforts to support T&E applications by continued development of CWA and BWA simulants and refine simulant application by expanding agent-simulant correlation studies. All NTA-related efforts re-aligned to Threat Agent Science NTA within this Project. ***FY 2012 Plans:*** Expand investigations of fundamental mechanisms that contribute to BWA persistence and transport; transfer information from previous studies to operational models. Identify markers of cultured versus naturally occurring agents, as well as markers of persistence of biological agents. Continue to support test and evaluation needs for both CWA and BWA simulants. Characterize environmental factors affecting persistence and binding to environmental elements such as soil. Advance the understanding of fundamental interactions between agents and substrates in order to improve predictive modeling that supports other capability areas, such as detection and hazard mitigation.			
Title: 18) Threat Agent Science NTA ***Description:*** 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. ***FY 2011 Plans:*** Establish human NTA operational toxicity estimates and interim human health risk assessments. Characterize the effects of alternate toxicological pathways. Expand agent fate studies to additional agent-substrate interactions. Correlate agent adsorption/absorption coefficients to chemical properties. Expand research on NTA liquid and solid phase transport to include re-suspension of particulates. Apply computational tools to identify data requirements and accelerate QSAR application to NTA interactions with operational substrates and toxicology issues. Correlate human effects to contact with operationally-relevant surfaces. Further research on NTA chemistry. Continue development of NTA simulants and simulant correlation studies. ***FY 2012 Plans:*** Continue efforts from previous year, working through the list of priority agents. Provide necessary operational and residual contact hazards as well as aerosol and percutaneous toxicity standards for NTAs. Deliver prioritized fundamental analysis,	-	17.200	25.497

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
including physicochemical properties such as volatility, solubility, mass transport, reactivity, stability and other factors. Examine physical parameters that govern NTA stability on operational materials.			
Title: 19) Information Systems Technology	6.608	3.844	5.764
Description: 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. ***FY 2010 Accomplishments:*** Utilized newly released field test data to conduct validation and verification (V&V) of outdoor Source Term Estimation (STE) algorithms. Initiated development of a networked chemical and biological (CB) detector false alarm reduction capability for an advanced development program (Joint Warning and Reporting Network (JWARN). Initiated development of rapid STE tool for JWARN. Expanded virtual test environment model to include fielded sensors and enhanced geospatial information. Expanded and improved data assimilation techniques for linking chemical, environmental and medical surveillance sensor data with computer based applications. Continued development of advanced STE, Hazard Refinement (HR) and Sensor Placement Tool (SPT) algorithms for use in complex environments (e.g., variable terrain, urban, water). Extended coupling between environmental parameters and advanced development programs. Continued development of a tool that continuously refines and updates the contamination footprint through rapid assimilation of limited and disparate information into meteorological, transport and dispersion, and virtual environment models. ***FY 2011 Plans:*** Refine advanced STE and HR algorithms for use in complex environments (e.g., variable terrain, urban, water), based on results of field trial-based V&V effort. Complete testing and V&V of first-generation networked CB detector false alarm reduction capability for an advanced development program (JWARN). Expand and improve data assimilation techniques for linking chemical, environmental, medical surveillance, and other disparate sensor data with computer based applications. Complete development of STE, HR, and SPT for use in complex environments. Continue to enhance coupling between environmental parameters and advanced development programs. Finalize development of a tool that continuously refines and updates the contamination footprint through rapid assimilation of limited and disparate information into meteorological, transport and dispersion, and virtual environment models. ***FY 2012 Plans:*** Initiate study on integration of biosurveillance data with disease spread models to enable early warning and reporting capabilities. Investigation will include 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			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
interoperability, and approaches to facilitate using the architecture in near real time to update disease spread models with new biosurveillance data. Complete advanced STE and HR algorithms for use in complex environments (e.g., variable terrain, urban, water), based on results of field trial-based V&V effort. Continue to expand and improve data assimilation techniques for linking chemical, environmental, medical surveillance, and other disparate sensor data with computer based applications. Complete enhancing coupling between environmental parameters and advanced development programs.			
Title: 20) Information Systems Technology ***Description:*** 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 or accidents. ***FY 2010 Accomplishments:*** Initiated development of a high altitude post-missile intercept hazard prediction model for integration with Joint Effects Model (JEM). Continued optimization of methods to significantly improve performance of transport and dispersion hazard models for JEM in both open air and urban environments which used Second Order Closure Puff Atmospheric Transport and Dispersion (SCIPUFF AT&D) and Micro-Stationary Wind Fit with Turbulence (Micro-SWIFT). Initiated development of a waterborne transport model by beginning investigation of the transport methods of chemical agents. Continued advancing modeling techniques for chemical, biological, and industrial source models IFAC, ITRANS, and CBFAC. Continued experimental verification of models by way of small scale tests initiated in FY09. ***FY 2011 Plans:*** Continue to develop a high altitude post-missile intercept hazard prediction model for chemical, biological, and nuclear dispersion and integrate with advanced development programs. Continue to develop models for waterborne transport and dispersion of chemical agents. Continue to improve and optimize transport and dispersion models in open and urban environments. Implement source backtracking in advanced urban models. Implement methods for foreign regions as well as dynamic climatology. ***FY 2012 Plans:*** Continue 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. Further develop a high altitude post-missile intercept hazard prediction model for eventual integration into the JEM supplemented by small scale testing for model validation. Initiate enhancement of urban dispersion models to include source characterization/backtracking for eventual integration into the JEM. Initiate implementation and testing of new numerical schemes for future establishment of 64-bit/ multi-core capable models.	5.529	3.030	3.113
Title: 21) Information Systems Technology	-	-	4.547

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: 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. ***FY 2012 Plans:*** Continue development of efforts previously funded under Simulation Analysis and Planning in FY11 also under this project. Initiate studies on regional social/cultural norms for application in agent based models. Initiate regional study of social reaction to disease and disease mitigation strategies to support biosurveillance. Initiate development of human cognitive models that incorporate the effects of chemical biological agent interaction with other battle stressors to facilitate operational decision making.			
Title: 22) Information Systems Technology ***Description:*** Systems Performance Information & Analysis: Develop Chemical, Biological, Radiological and Nuclear (CBRN) data sharing capabilities and simulation tools. ***FY 2010 Accomplishments:*** Developed data collection and exchange methodologies for implementation in the Chemical, Biological, Radiological and Nuclear (CBRN) Data Backbone. Designed CB Warfare Effects Manual. ***FY 2011 Plans:*** Construct a plan for development of an authoritative source (the CB Agent Effects Manual or CB-1; previously, the CB Warfare Effects Manual) capturing analytical methods for evaluating the effects of chemical and biological warfare on equipment, personnel, and operations. Develop capabilities to simulate decontamination processes to enhance the CBDP's ability to evaluate decontaminants and decontamination systems. Continue to explore the technical feasibility and potential utility of a bio-surveillance data analysis platform. ***FY 2012 Plans:*** Initiate development of an authoritative manual capturing analytical methods for evaluating the effects of chemical and biological warfare on equipment, personnel, and operations.	3.660	3.502	0.569
Title: 23) Information Systems Technology ***Description:*** Medical & Surveillance 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	-	-	6.059

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
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. ***FY 2012 Plans:*** Continue development previously funded under Simulation Analysis and Planning in FY11 also in this project. Continue effort on biosurveillance data stream evaluation and analysis. Initiate effort to devise structured expansion roadmap for agent-based epidemiological models for Outside Contiguous United States (OCONUS) and special population analysis to model emerging disease and the effects of targeted countermeasures.			
Title: 24) Information Systems Technology ***Description:*** Simulation Analysis and 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, human knowledge management, health/human effects modeling including casualty estimation, and fusion of diseases surveillance data. ***FY 2010 Accomplishments:*** Developed and improved methodologies to apply CB operational effects in tactical, operational and strategic level models for mobile forces, shipboard modeling, fixed sites and tactical aircraft. Continued development of Incident Management/ Consequence Management (IM/CM) tools and capabilities. Continued refinement and expansion of decision support tools for advanced development efforts. Completed distributed modeling research. Refined and updated secondary infection models and NBC Casualty Resource Estimation Support Tool (NBC CREST) human effects models to reflect revision of NATO's Allied Medical Publication 8 (AMedP-8). Initiated development of casualty estimation methodology for CBRN agents including Non-Traditional Agents. Initiated development of medical resource estimation and medical countermeasure models for enhanced situational awareness and course of action analysis. Initiated development of epidemic characterization and prediction capability for crisis response planning. ***FY 2011 Plans:*** Complete development of refined versions of secondary infection models and human effects models to reflect revision of NATO's AMedP-8. Initiate development of additional casualty estimation modules for agents not in NATO's AMedP-8, including Non-Traditional Agents. Continue development of contagious/infectious disease models. Continue developing efforts aimed at integrating CB operational effects in tactical and operational level models for mobile forces, shipboard modeling, fixed sites and tactical aircraft. Further develop IM/CM tools and capabilities. Initiate development of capabilities that leverage and integrate	8.048	7.395	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
existing early detection and disease surveillance data for inclusion into advanced development efforts. Develop route planning and evacuation/shelter-in-place decision aids.			
Title: 25) Information Systems Technology NTA ***Description:*** Modeling & Simulation for Non-Traditional Agents (NTA): Provide modeling of NTA materials for hazard prediction. Develop NTA source term algorithms for 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 V&V, scaled testing, casualty estimation, and supporting data management ***FY 2012 Plans:*** Establish initial methodologies of defining NTA source terms for relevant scenarios. Begin establishment of a classified database for linking NTA types to weapon system types. Expand material file collection to include those NTAs on which there is sufficient initial data. Create initial priority list of remaining agents with data gaps. Initiate the establishment of capabilities for data collection on NTA data gaps. Initiate planning and implementation of small scale testing for NTA simulants for use in creating and verifying NTA modeling source terms.	-	-	1.442
Title: 26) Detection ***Description:*** 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. ***FY 2010 Accomplishments:*** Continued concept development of nano-scale biological agent identification and sensing technologies. Continued development of technology to completely sequence entire pathogen genomes with automated sample preparation. Continued feasibility studies of nanoscale detection systems. Completed transition of MEMS technology from DARPA and integrated it into a MEMS FTIR sensor system as next generation chemical warfare agent detector. Continued studies to increase understanding of critical biological antigen variability. Continued a scientific analysis on the technical impacts of the presence of agents on surfaces and expand to include aerosol and operational scenarios due to the presence of NTAs. Continued assessment of chemical fate of	10.194	5.289	8.923

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
chemicals in potable water. Continued feasibility development of plant sentinel concept. Initiated development of MEMS version of a gas chromatograph-mass spectrometer (GC-Mass Spec) technology in collaboration with DARPA. ***FY 2011 Plans:*** Continue concept development of nano-scale biological agent identification and sensing technologies. Continue feasibility studies of nanoscale detection systems. Demonstrate MEMS FTIR sensor system. Demonstrate technology to completely sequence entire pathogen genomes with automated sample preparation. Complete studies to increase understanding of critical biological antigen variability. All NTA-related efforts re-aligned to Detection NTA within this Budget Activity. ***FY 2012 Plans:*** Continue concept development of nano-scale biological agent identification and sensing technologies. Continue feasibility studies of nanoscale detection systems. Continue integration studies for the NGCPD based on MEMS components for GC, IR, and MS. Continue development of breadboard prototype for complete sequencing entire pathogen genomes with automated sample preparation which also applies to biosurveillance.			
Title: 27) Detection ***Description:*** Chemical and Biological Stand-off Detection Technology: Emphasis on the detection and identification of chemical and biological threats to include NTAs in near real time at a distance from the detector. Future programs focus on the improvement of algorithms, excitation sources, and detector elements to increase range, reduce false positives, increase sensitivity, and reduce cost. ***FY 2010 Accomplishments:*** Continued algorithm development to increase range capabilities and reduce false positives. Continued first generation active infrared standoff biological classification capabilities development. Continued design of first generation chemical standoff detection and identification capabilities. Completed models of technology to meet the needs to detect contamination on surfaces in a post decontamination application. Continued to evaluate and assess technology for scattering optical techniques, non-scattering optical standoff techniques, and off-gassing techniques for down-selection of breadboard design. ***FY 2011 Plans:*** Complete algorithm development to increase range capabilities and reduce false positives. Complete work on first generation active infrared (IR) standoff biological classification capabilities. Complete evaluation and assessment of technology for scattering optical techniques, non-scattering optical standoff techniques, and off-gassing for down-selection of breadboard design. All NTA-related efforts re-aligned to Detection NTA within this Project.	14.366	9.100	-
Title: 28) Detection NTA	-	12.000	13.066

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Primary focus is to assess the potential of optical technologies to meet the needs to detect the presence of NTAs. ***FY 2011 Plans:*** Complete a scientific analysis on the technical impacts of the presence of agents on surfaces due to the presence of NTAs. Complete assessment of chemical fate of chemicals in potable water. Continue feasibility development of plant sentinel concept. Initiate development from technology concepts and models to meet the needs to detect contamination on surfaces in pre and post decontamination application. Initiate concept designs for chemical aerosols point detection system. ***FY 2012 Plans:*** Continue 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. Complete designs for chemical aerosols point detection system. Initiate integration studies for chemical aerosol detection into the NGCPD.			
Accomplishments/Planned Programs Subtotals	110.937	88.897	97.774

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CB1: *CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)*	33.630	31.041	0.000		0.000	0.000	0.000	0.000	0.000	0.000	64.671
• CB3: *CHEMICAL BIOLOGICAL DEFENSE (ATD)*	26.964	15.410	23.818		23.818	30.514	37.806	38.139	38.586	Continuing	Continuing
• TE3: *TEST & EVALUATION (ATD)*	12.296	11.875	11.199		11.199	11.081	0.992	0.991	0.990	Continuing	Continuing
• TT3: *TECHBASE TECHNOLOGY TRANSITION*	7.381	4.504	0.000		0.000	0.000	0.000	0.000	0.000	0.000	11.885

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CI2: *CONGRESSIONAL INTEREST ITEMS (APPLIED RESEARCH)*	27.186	-	-	-	-	-	-	-	-	0.000	27.186

A. Mission Description and Budget Item Justification

The efforts in this project include congressional interest programs for FY10.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Chem/Bio IR Detection System ***FY 2010 Accomplishments:*** Developed an advanced chemical and biological detection system using a common platform to include detection of emerging novel agents and toxic industrial chemicals. Designed and built a prototype and automated detector system for trace level detection of chemical and biological warfare (CW and BW) agents in water and air using a common detection platform.	1.892	-
Congressional Add: HyperAcute Vaccine Development ***FY 2010 Accomplishments:*** Determined how the alpha-galactosidase adjuvant technology can improve the efficacy of new and existing vaccines, which should lead to a reduction in the overall number of required vaccinations and a decrease of the vaccine dose, thus making vaccine production more cost-effective and, for the end user (i.e., government: Strategic National Stockpile) more affordable.	3.585	-
Congressional Add: Chemical Agent Fate Appropriate Response Tool ***FY 2010 Accomplishments:*** Developed a model/tool that affords the user the probabilities and risks associated with a chemical contamination event and recommends the most appropriate response to mitigate the hazard.	1.593	-
Congressional Add: Botulinum Neurotoxin Research ***FY 2010 Accomplishments:*** Developed an assay which is designed to detect Botulinum (A-G) in the environment and on exposed animals, humans and culture cells. The objective is to design a simplified hand-held fluorescence detection system for this type of assay.	1.992	-
Congressional Add: Miniaturized Chemical Detector for Chemical Warfare Protection (ChemPen)	1.593	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
FY 2010 Accomplishments: Developed a functional interferometer, integrated it into a brassboard spectrometer system, and demonstrated spectral acquisition which could be used to detect chemicals, such as sulfer-hexaflouride (SF6).		
Congressional Add: Chemical and Biological Resistant Clothing ***FY 2010 Accomplishments:*** Developed a material capable of simultaneously being lightweight, robust, breathable, and resistant to chemical and biological agents. The objective of this effort is identification and lab-scale production of a semi-permeable membrane polymer that is lightweight, breathable, and mechanically robust for use as a barrier layer within a multi-layer protection ensemble garment worn by military personnel/first-responders.	1.593	-
Congressional Add: Botulinum Toxin Treatment Therapy ***FY 2010 Accomplishments:*** Developed new therapies for botulinum toxin poisoning to protect the civilian population against other bioterrorism threats.	0.797	-
Congressional Add: PaintShield for Protecting People from Microbial Threats ***FY 2010 Accomplishments:*** Developed the PaintShield coating technology, a cost-effective, interior paint platform that will render microbiological threats harmless upon contact, to facilitate significant increases in research and development programs for an expanded array of related environmental health applications.	1.992	-
Congressional Add: Mismatch Repair Derived Antibody Medicines to Treat Staphylococcus-derived Bioweapons ***FY 2010 Accomplishments:*** Developed a highly efficient therapeutics to treat exposure to potential biological weapons. These efforts have resulted in the development of potent lead antibodies, one of which can neutralize staphylococcus enterotoxin B (SEB). Conducted final studies using Good Laboratory Practices (GLP)-grade materials in GLP non-human primate studies as a final validation step before advancing the program into human clinical trials.	0.996	-
Congressional Add: Advanced Development of Antiviral Prophylaxis and Therapeutics ***FY 2010 Accomplishments:*** Continued the research on an anti-hemorrhagic fever virus (HFV) drug discovery and lead optimization efforts. Continued advancement of at least two chemical series through the first critical steps toward filing an Investigational New Drug (IND) application: efficacy, safety and mechanism of action.	2.987	-
Congressional Add: Potent Human Monocolonal Antibodies Against BoNT, A, B and E (Botulinum Neurotoxins) Suited for Mass Production and Treatment of Large Populations	0.996	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
FY 2010 Accomplishments: Developed humanized monoclonal antibodies for passive immunization of military or civilian individuals capable of neutralizing botulinum toxins BoNT/A, BoNT/B, and BoNT/E.		
Congressional Add: Countermeasures to Chemical and Biological Controls-Rapid Response ***FY 2010 Accomplishments:*** Developed new, low cost, detection technologies with a high level of differentiation that can be deployed independently or integrated into existing and future CBRN reconnaissance systems.	2.788	-
Congressional Add: MEMS Sensors for Real-time Sensing of Weaponized Pathogens ***FY 2010 Accomplishments:*** Developed wearable, diamond-based MEMS biosensors for first responders or Warfighters that detect weaponized pathogens in real-time.	1.992	-
Congressional Add: Mobile Rapid Response Prototype ***FY 2010 Accomplishments:*** Developed prototype capability to incorporate commercial "best in class" components, processes, tools, techniques, and training to ensure that responders will be able to provide appropriate treatment, diagnose disease with forward-deployable assays, and ultimately minimize the toll on human life.	2.390	-
Congressional Adds Subtotals	27.186	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*	7.968	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	7.968
• CI3: *CONGRESSIONAL INTEREST ITEMS (ATD)*	30.172	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	30.172

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	54.858	43.858	84.747	-	84.747	85.493	76.011	52.527	75.583	Continuing	Continuing

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 chemical, biological, and radiological (CBR) agents.

This project also includes efforts such as the Transformational Medical Technologies Initiative (TMTI). Effective FY12 this effort is funded as the Transformational Medical Technologies (TMT) Program. 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 public-private parternship agreements 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 three areas: 1) novel platform/expression systems for MCMs, 2) advancement of regulatory science, and 3) advancements in flexible manufacturing technologies for MCMs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Diagnostics (Biosurveillance)	7.518	6.994	13.933
Description: 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.			
FY 2010 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Implemented restructured intra- and inter-agency strategy for Next Generation Diagnostic System (NGDS) candidate technology assessment and maturation. Continued development of panel of potential pre-symptomatic indicators of exposure/infection. Developed affinity reagent production and characterization pipeline and apply materials and data coordination with technology maturation efforts. Developed affinity-based amplification prototype assays for application on PCR-based fluorometric system. Applied nano-diagnostic technology to demonstrate BWA viability and analytic application. Developed target enrichment methods for rapid diagnostic de novo sequencing of BWA directly from clinical matrices. Developed micro-RNA library and study diagnostic utility. ***FY 2011 Plans:*** Develop high-throughput technologies for identification, evaluation, and validation of agent-specific genetic and immunological assay targets using sequencers and microarrays. Complete development and assess performance of affinity-based protein expression amplification methods. Continue to discover and develop pre-symptomatic diagnostic signatures for additional agents and investigate diagnostic utility as early indicators of exposure/infection in animal models. Evaluate nano diagnostic technologies for ease-of-use, sensitivity, specificity and cost. Continue development and application of rapid sequencing technology and target enrichment for deployable field environment. Investigate advancement of technologies and procedures for broad multiplex detection of agent gene expression, proteomic and antibiotic resistance profiles. Develop a geographically representative strain collection and assay(s) capable of detecting an emerging threat agent of high genetic variability. ***FY 2012 Plans:*** Verify performance of informative genetic and affinity probes and optimize number of probes required to capture predictive signature coverage. Verify performance of pre-symptomatic diagnostic biomarker panels in blinded BWA and emerging threat pathogen-exposed animal samples. Develop pan-emerging threat agent genotyping assay for fieldable sequence-based genetic analyzer to supplement/replace strain-specific assays.			
Title: 2) Medical Countermeasures Initiative (MCMI) ***FY 2012 Plans:*** Conduct studies to explore increasing the efficiency, responsiveness and speed of biopharmaceutical manufacturing through use of more flexible, non-traditional host-vector systems. Initiate and refine development of multi-product/multi-use platform technologies for flexible manufacturing processes for MCMs. Evaluate and exploit the regulatory advantages of such systems, with the intent that approval of the platform for one product will simplify subsequent approvals of other products based on the same system.	-	-	6.663
Title: 3) Pretreatments	4.050	5.254	5.051

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012

Description: 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 animals models.

FY 2010 Accomplishments:
Tested the efficacy of Burkholderia vaccine candidates against aerosol challenge in small animal models. Initiated study to determine the therapeutic regimen needed in conjunction with a vaccine to eliminate residual Burkholderia organisms and began evaluation of the immune response elicited by the vaccine. Used comparative animal studies to test the efficacy of disease inactivated, but metabolically active vaccine candidates against Brucella species. Initiated study to compare the ability of the disease inactivated, but metabolically active vaccine candidates to protect mice against aerosol challenge with distinct strains of Brucella following oral immunization. Continued to test the immune stimulation and effectiveness of novel anthrax vaccines (e.g., multi-component genetically altered vaccines composed of spore antigens, etc.) to combat emerging and genetically engineered strains. Initiated studies aimed at generating a second-generation vaccine that protects against aerosolized Type A Francisella tularensis.

FY 2011 Plans:
Continue aerosol efficacy studies in mice for Brucella and Burkholderia vaccine candidates. Work to improve the efficacy of the most promising vaccine candidates against Burkholderia and Brucella by initiating studies that vary the route of immunization, dose and vaccination schedule. Begin investigating whether the efficacy of the Brucella and Burkholderia vaccine candidates can be approved by co-administering the vaccines with nonspecific stimulators of the immune response (i.e., adjuvants). Test the ability of antibiotics to remove residual Burkholderia from vaccinated animals to prevent reactivation of disease. Identify measures of immunity elicited by vaccine candidates against Brucella and Burkholderia. Test the efficacy of novel next-generation, multi-valent anthrax vaccines in small animal models against aerosol challenge. Determine the immune stimulation capability of novel subunit vaccines comprised of proteins involved in a common virulence pathway shared by most gram negative bacteria, including Yersinia pestis. Investigate the potential of outer membrane proteins isolated from Type A Francisella tularensis to serve as vaccine candidates against aerosol challenge with the pathogen in small animal models.

FY 2012 Plans:
Improve upon the most promising existing whole-cell vaccine candidates directed against Burkholderia and Brucella species. Identify correlates of immunity, elicited by Brucella and Burkholderia species vaccine candidates, which predict vaccine efficacy. Continue efforts designed to examine the efficacy of adjuvants co-administered with existing vaccine candidates against Burkholderia and Brucella species In a concurrent effort, open investigative avenues in search of next-generation vaccine candidates directed against Burkholderia and Brucella species. Continue 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 will continue to produce vaccine candidates designed to protect against emerging or genetically engineered

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
anthrax strains. Examine the efficacy of rationally designed, next-generation Type A Francisella tularensis vaccine against aerosol challenge in rat and non-human primate models. Maintain research designed evaluate outer membrane proteins isolated from Type A Francisella tularensis as vaccine candidates against aerosol challenge with the pathogen in small animal models.			
Title: 4) Pretreatments ***Description:*** Viral Vaccines: Design vaccines against the Filoviruses (Ebola and Marburg strains) and Alphaviruses (VEE, EEE, WEE) using distinct vaccine platforms, and demonstrate preliminary efficacy in animal models. Identify correlates of protective immunity in animal models. ***FY 2010 Accomplishments:*** Identified correlates of immunity for alphavirus (VEE, EEE, WEE) vaccine candidates. Defined immune correlates of protection for mature Marburg and Ebola virus vaccine candidates. Developed vaccine candidates for emerging filovirus strains (e.g. Ebola Uganda strain). ***FY 2011 Plans:*** Further define immune correlates of protection for alphavirus (i.e., EEE and WEE) vaccine candidates. Continue to characterize the immune response to Ebola and Marburg viruses in order to identify correlates of protection in animal models, and establish assays to measure these immune correlates. Assess the immune stimulation and effectiveness of vaccine candidates against a new strain of the Ebola virus, Ebola Bundibugyo, in animal challenge models. ***FY 2012 Plans:*** Continue to characterize the innate, humoral and cellular immune response of the Ebola/Marburg vaccine candidates in the relevant animal models. Produce, characterize, optimize and test reagents for Filovirus immunological assays. Develop assays to measure innate, cellular, and humoral immune responses to Alphaviruses (i.e., EEE, WEE and VEE) which predict protective immunity. Produce, characterize, optimize and test reagents for Alphavirus immunological assays.	2.948	0.525	0.484
Title: 5) Pretreatments ***Description:*** 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. ***FY 2010 Accomplishments:***	4.229	4.729	4.567

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Researched multiagent vaccines, immune interference, immune stimulation formulations, vaccine delivery/stabilization, and efforts to predict the human immune response to vaccine candidates. Developed and tested new platform technologies that support the expression of multiple antigens. Explored new multi-agent vaccine formulations for immune stimulation in animal models. Further examined devices for efficient administration of DNA vaccines. Began evaluating alternate, needle-free immunization strategies (i.e., intranasal, oral, and transdermal administration) with current vaccine candidates (non-DNA) against biological threats. Conducted studies to advance the laboratory based artificial human immune system to optimize antibody production. Obtained samples from individuals in the Former Soviet Union that had either been vaccinated against or infected with endemic pathogens considered to be threat organisms in order to evaluate the human immunologic response to these agents and/or vaccines. Evaluated new immune stimulating formulations for their ability to enhance vaccine effectiveness in animal models by examining the antibody and cell-based immune responses. ***FY 2011 Plans:*** Continue to construct new multi-agent vaccine formulations utilizing platform technologies that support the expression of multiple antigens, and test these multi-agent vaccines for immune stimulation in small animal models. Compare an intra-dermal versus intra-muscular electric field device for delivery of DNA vaccines against bio-threat agents in small animals. Continue studies to advance the laboratory based, surrogate human immune system termed the Modular Immune In vitro Construct (MIMIC), which provides a three-dimensional peripheral tissue model intended to reliably reproduce the human immune response. Complete optimization of the production of high affinity antibodies by the MIMIC in response to biodefense vaccines, and develop a sensitive fluorescent-based assay to assess the functionality of the antibodies generated. Adapt the MIMIC to function as an infectious disease model for alphaviruses and filoviruses. Use these MIMIC in infectious disease models to begin to define human correlates of protective immunity against alphaviruses and filoviruses. Initiate studies to develop methodologies that render different types of vaccine platforms (i.e., viral vector, inactivated virus, virus like particles, and attenuated bacteria, etc.) stable in variable and extreme temperatures. ***FY 2012 Plans:*** Continue to develop new platform technologies that support the presentation of multiple antigens to the immune system. Develop relevant animal models for the evaluation of the immune response to multi-antigen platforms. Continue studies to develop alternative methodologies for vaccine delivery (i.e., electroporation) via intra-muscular or intra-dermal administration. Continue studies to advance the surrogate human immune system, MIMIC (i.e., Modular Immune In vitro Construct), which provides an in vitro assessment of the human immune response. Complete studies to assess the cross-reactivity of antigens present in different Filoviruses and Alphaviruses. Use MIMIC to define human correlates of immunity in responses various bio-threat agents. Continue studies to develop methodologies which remove the need for cold storage and transport for vaccines and renders them stable in variable and extreme temperatures.			
Title: 6) Therapeutics	4.729	1.600	5.792

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Viral Therapeutics: Identify, optimize and evaluate lead candidate therapeutics for efficacy against viral pathogens. ***FY 2010 Accomplishments:*** Initiated drug discovery for a second novel orthopox drug with a mechanism distinct from ST-246, a low-molecular-weight compound that is active against multiple orthopoxviruses. Expanded drug discovery efforts for alphaviruses (VEE, EEE, and WEE). Established clinical protocols to obtain human clinical samples from filovirus outbreaks in the Democratic Republic of the Congo. Tested and evaluated lead candidate therapeutic compounds in relevant animal challenge models. Continued testing of heavy metal nanoparticle-based therapeutics for the ability to prevent viral infection in animal models. Identified lead compounds from small molecule library screening and optimize their action through medicinal chemistry. Tested and evaluated small protein fragments to determine if their ability to prevent a virus from binding to cells represents a viable therapeutic interdiction point for designated viral pathogens. ***FY 2011 Plans:*** Identify FDA approved drug combinations with efficacy against alphavirus infection. Identify and develop small molecule inhibitors to specific host factors required for alphavirus pathogenesis. Conduct structure-based screening of chemical libraries to identify inhibitors of alphavirus proteins. Utilize medicinal chemistry to optimize antiviral activity of lead compounds. Identify therapeutic inhibitors of orthopoxvirus infection by targeting required host and viral tyrosine phosphatases. ***FY 2012 Plans:*** Validate FDA approved drug combinations against alphavirus infection. Continue optimization of pathogen and host directed small molecule inhibitors 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). Optimize therapeutic inhibitors of host and viral tyrosine phosphatases for orthpoxvirus infection.			
Title: 7) Therapeutics ***Description:*** Bacterial Therapeutics: Identify, optimize and evaluate lead therapeutic candidates effective against designated bacterial threat agents. ***FY 2010 Accomplishments:*** Completed evaluation of bacterial phosphatase inhibitors in a mouse model of plague infection. Tested and evaluated lead candidate small molecules to determine their antimicrobial activity. Screened commercially available antimicrobial in advanced clinical development for their activity in the laboratory against bacterial threat agents. ***FY 2011 Plans:***	2.684	4.100	5.932

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue the identification of commercially available antimicrobials in advanced clinical development with laboratory assayed activity against bacterial threat agents. Assess compounds identified in high content imaging assays for their antimicrobial activity in relevant animal challenge models. ***FY 2012 Plans:*** 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. Optimize lead series of MurB compounds targeting cell wall biosynthesis. Determine synergy between MurB antibacterial agents and conventional antibiotics against B. anthracis and Y. pestis. Identify and validate compounds that inhibit bacterial SOS induction thereby potentiating the effects of FDA approved drugs. Select a second FDA approved drug to focus on for Burkholderia and F. Tularensis.			
Title: 8) Therapeutics ***Description:*** Toxin Therapeutics: Identify, optimize and evaluate therapeutic candidates that are effective against biological toxin agents. ***FY 2010 Accomplishments:*** Screened compound libraries utilizing a high-throughput screening system for botulinum neurotoxin (BoNT) therapeutics derived from mouse cells and embryonic stem cells. Tested and evaluated lead candidate inhibitors in relevant laboratory and animal model systems of BoNT intoxication. Performed experimental analysis to clarify the contribution of protein modification of BoNT to its structure and biochemical activity as it relates to drug development. Conducted high-throughput screening of drug libraries to identify inhibitors of ricin toxicity. ***FY 2011 Plans:*** Develop transgenic mice expressing genetically-encoded reporters of BoNT activity in neurons for use in high-throughput screening of BoNT therapeutics. Validate neurite outgrowth analysis for the identification of BoNT inhibitors. Identify host proteins responsible for BoNT light chain stabilization. Conduct co-crystallization studies of BoNT-inhibitor complexes. Perform experiments to determine toxicity and pharmacokinetics of selected ricin inhibitors. Identify host proteins involved in ricin dislocation as potential host-directed drug targets. Determine efficacy of identified ricin inhibitors in mice. ***FY 2012 Plans:*** Validate host proteins responsible for BoNT light-chain stabilization. Continue co-crystallization studies of BoNT-inhibitor complexes. 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. Validate host proteins involved in ricin	7.676	9.171	5.792

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
dislocation as potential drug targets. Continue development small molecule inhibitors to toxin threat agents (BoNT, ricin, and staphylococcal enterotoxin B).			
Title: 9) Transformational Medical Technologies Initiative ***Description:*** Multiagent (Broad Spectrum) Medical Countermeasures (MCM): Builds upon basic research performed by existing performers and supports the efforts of new performers who are in the mid-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 processes. ***FY 2010 Accomplishments:*** Continued efforts to evaluate novel drugs to treat HFV and ICB pathogen infections. Matured promising compounds in combination with lead therapeutic candidates. ***FY 2011 Plans:*** Continue to support new MCM discovery efforts entering the product pipeline. Continue to evaluate and mature novel drugs as post-exposure prophylaxis and treatment for HFVs and IBP infections. Identify and initiate the development of intervention strategies targeting host pathogen response, inclusive of enhancing the immune system and addressing symptoms to reduce the severity of disease.	4.105	8.037	-
Title: 10) Transformational Medical Technologies Initiative ***Description:*** Development of Platform Technologies: 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 Discovery, Countermeasure Evaluation, and Bioinfomatics. 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. ***FY 2010 Accomplishments:*** Identified enabling and critical technologies, formulated appropriate technology plans and acquisition strategies, and determined their performance objectives. Initiated development of an information network to serve as the backbone for a rapid drug discovery	16.919	3.448	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
and development capability. Supported development of platform technologies to higher levels of maturity. Genetic sequencing studies modeled the types and quantity of data needed for the identification of unknown pathogen ID, including a genomic survey for countermeasure targets and genetic engineering. Evaluated the information network to serve as the backbone for a rapid drug discovery and development capability. Pursued informatics to support analytical activities, event response, and science discovery. Initiated work on advanced manufacturing to enhance the rapid production of therapeutics. ***FY 2011 Plans:*** Continue the development of host and pathogen based platforms to higher levels of maturity. Continue to explore pathogen identification and characterization capabilities, including genetic sequencing, integrate existing capabilities. Continue to assess future sequence and analysis needs to characterize advanced threats. Continue to integrate leading edge technologies with existing technologies to enhance pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation platform areas.			
Title: 11) Transformational Medical Technologies ***Description:*** 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). ***FY 2012 Plans:*** 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.	-	-	31.084
Title: 12) Transformational Medical Technologies ***Description:*** 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 Discovery, Countermeasure Evaluation, and Bioinfomatics. Applied research efforts include the maturation of the components	-	-	5.449

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
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. ***FY 2012 Plans:*** Investment to further develop host and pathogen based platforms to higher levels of maturity and fund Bio-Surveillance efforts. Continue to mature pathogen identification and characterization capabilities, including genetic sequencing, integrate existing capabilities. Continue to develop genetic sequencing and analysis technologies to characterize advanced threats. Continue integration of leading edge technologies with existing technologies to enhance pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation platform areas.			
Accomplishments/Planned Programs Subtotals	54.858	43.858	84.747

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	95.483	136.975	137.653		137.653	150.128	167.604	133.589	119.626	Continuing	Continuing
• MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	57.563	141.680	272.345		272.345	259.039	354.900	331.308	310.104	Continuing	Continuing
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	0.000	0.000	5.448		5.448	0.492	0.493	8.851	15.459	Continuing	Continuing
• TB1: *MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)*	15.246	14.352	7.456		7.456	8.939	8.934	6.110	8.931	Continuing	Continuing
• TB3: *MEDICAL BIOLOGICAL DEFENSE (ATD)*	196.007	115.233	172.636		172.636	180.913	167.900	149.413	148.398	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*	38.644	33.648	36.546	-	36.546	36.993	37.789	38.163	39.395	Continuing	Continuing

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, skin decontaminants and therapeutic drugs against identified and emerging chemical warfare threat agents to include a class of agents called Non Traditional Agents (NTAs). In FY11, all NTA-dedicated research was re-aligned into specific capability areas within this project in order to ensure a focused effort on this high priority area. 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Diagnostics	0.711	0.865	0.929
Description: 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.			
FY 2010 Accomplishments: Continued development of definitive diagnostic biomarkers for early detection of CWA exposure using several different analytical approaches. Developed pre-symptomatic diagnostic technologies for eventual incorporation into handheld devices in order to detect CWA exposures.			
FY 2011 Plans: Continue to determine whether existing CWA biomarkers are appropriate for early detection and validation of CWA exposure in clinical samples. Determine if biomarkers that appear after exposure to sulfur mustard can be used to identify an appropriate treatment option prior to the onset of symptoms. Continue investigation of a novel surface plasmon resonance based sensor array and a phage library display to develop binding molecules as biomarkers of nerve agent exposure. All NTA-related efforts are re-aligned to Chemical Diagnostics NTA within this Budget Activity.			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete studies of existing CWA biomarkers to determine effectiveness for early detection. Complete sulfur mustard biomarker studies for identifying pre-symptomatic treatment options. Continue investigation of a novel sensor using a phage library display.			
Title: 2) Chem Diagnostics NTA ***Description:*** Focuses on developing state-of-the-art laboratory/fieldable methods to detect exposure to non-traditional agents in clinical samples. Identifies biomolecular targets that can be leveraged as analytical methodologies, as well as, laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker. Non-NTA Chem Diagnostics support the analytics for traditional agent diagnostics and hand-held diagnostic technologies that might be applied to NTA diagnostics. ***FY 2011 Plans:*** Continue studies 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. ***FY 2012 Plans:*** Further 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. Initiate method development for identification and validation of NTAs in clinical samples for additional compounds of interest.	-	0.400	0.579
Title: 3) Pretreatments ***Description:*** 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. ***FY 2010 Accomplishments:*** Developed formulations for improved and reduced immune system stimulation of stoichiometric enzymes, with a particular focus on providing protection against Non-Traditional Agents (NTAs). Investigated improved drug-delivery systems for 1st generation stoichiometric enzymes. Conducted supportive studies toward licensure of stoichiometric enzymes. ***FY 2011 Plans:*** Further refine methods and expression systems for screening, production and purification of designed catalytic bioscavengers. Initiate development of animal expression systems for delivery of newly designed improved catalytic bioscavengers. Initiate efficacy studies of small molecule approaches towards acetylcholinesterase AChE protection. All NTA-related efforts are re-aligned to Chemical Pretreatments NTA within this Project. ***FY 2012 Plans:***	8.057	5.980	6.670

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Utilize novel methods to develop candidate proteins capable of destroying CWAs. Assess processes to produce, screen, and purify newly designed enzymes. Evaluate efficacy of small molecule approaches toward AChE protection.			
Title: 4) Chem Pretreatments NTA ***Description:*** Develops pretreatments that provide protection against non-traditional agents. Enzymes should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high catalytic efficiency for the destruction of agents. ***FY 2011 Plans:*** Continue efforts to investigate ways to decrease the development time to deliver a bioscavenger (stoichiometric/catalytic) to protect the Warfighter. Continue studies to determine efficacy of bioscavenger for all NTA exposure. ***FY 2012 Plans:*** Determine efficacy of enzyme candidates for all NTA exposure.	-	1.500	3.355
Title: 5) Therapeutics ***Description:*** 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. ***FY 2010 Accomplishments:*** Continued to determine the efficacy of bioengineering and molecular biology approaches to treat sulfur mustard ocular injury. Continued testing of cell-based approaches to facilitate blister agent wound healing. Continued development of a decontaminant for penetrating wounds containing CWAs. Maintain effort to determine the chronic consequences of blister agent exposure. Began novel efforts to increase drug delivery of candidate countermeasures. Enhanced current anti-inflammatory approaches to treating blister agent injury. Evaluated the commonality in mechanisms of blister-induced injury across tissues and routes of exposure. ***FY 2011 Plans:*** Continue development of novel drug delivery approaches for candidate countermeasures. Continue to determine the effectiveness of multiple anti-inflammatory approaches in vitro against blister agent exposure. Continue investigation of potential therapeutic approaches to mitigate the chronic effects of blister agent exposure. ***FY 2012 Plans:***	3.946	1.275	1.256

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Further evaluate the effectiveness of multiple anti-inflammatory approaches in vitro and in vivo against sulfur mustard exposure. Continue to develop molecular biology approaches to assess candidate countermeasures against skin and eye injury caused by sulfur mustard. Further evaluate most effective therapeutic approaches to mitigate the chronic effects of sulfur mustard exposure.			
Title: 6) Therapeutics ***Description:*** 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. ***FY 2010 Accomplishments:*** Identified and developed drug-delivery systems to improve the restoration of nerve transmitters following exposure to chemical agents. Utilized structure-activity relationships to identify anticholinergic drugs with reduced side effects and novel neuroprotectants and anti-epileptics to protect against nerve agents. ***FY 2011 Plans:*** Continue to investigate the mechanism of reactivation of nerve-agent inhibited acetylcholinesterase (AChE) in order to identify or design compounds that allow for a longer time frame between exposure and the administration of the therapeutic without decreasing its effectiveness. Continue to explore approaches for neuroprotection against nerve agent exposure. Develop therapeutic strategies to effectively minimize neurologic injuries resulting from exposure to CWAs by testing in silico and in vitro. ***FY 2012 Plans:*** Utilizing mechanistic understanding of reactivation, identify compounds capable of reactivating nerve-agent inhibited AChE at delayed times after exposure. Identify more effective approaches for neuroprotection, as defined by the minimization of chronic functional decrement due to nerve agent exposure. Conduct in silico and in vitro evaluation of novel and/or Food and Drug Administration licensed products for treatment of acute nerve agent exposure. Investigate systems biology approaches for nerve agent therapeutics.	10.830	7.840	10.787
Title: 7) Therapeutics ***Description:*** Medical Toxicology (Non Traditional Agents (NTAs) and Other Agents): 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. In FY11, all NTA-related efforts are re-aligned to Chemical Therapeutics NTA within this Project. ***FY 2010 Accomplishments:***	6.200	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Investigated and studied receptor effects of common and agent-specific mechanisms of NTA injury for therapeutic intervention.			
Title: 8) Therapeutics ***Description:*** Respiratory and Systemic: Supports investigation of the systemic host response to chemical warfare agent (CWA) injury via all routes of exposure, with emphasis on the respiratory system and chronic effects of exposure. This 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 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. ***FY 2010 Accomplishments:*** Evaluated safety, efficacy, dosing and relevant effects on the body, and the body's effects on the drug, of candidate countermeasures against lung injury. Investigated down-selected potential candidate countermeasures based on molecular biology approaches to CWA lung injury. Continued to study long-term health effects due to CWA exposure. ***FY 2011 Plans:*** Continue to evaluate safety, efficacy, dosing and relevant effects on the body, and the body's effects on the drug, of candidate countermeasures against lung injury. Continue to investigate down-selected potential candidate countermeasures based on molecular biology approaches to CWA lung injury. Continue to study long-term health effects due to CWA exposure.	2.700	2.788	-
Title: 9) Therapeutics ***Description:*** Therapeutics for Non Traditional Agents (NTAs): Develops, assesses, evaluates, and validates therapeutics for treatment resulting from exposure to NTAs. In FY11, all NTA-related efforts are re-aligned to Chemical Therapeutics NTA within this Project. ***FY 2010 Accomplishments:*** Further developed and validated animal models for testing clinical efficacy of therapeutics against NTAs. Identified binding characteristics of NTAs, as well as mitigated NTA toxicity by researching and developing novel therapeutics.	6.200	-	-
Title: 10) Chem Therapeutics NTA ***Description:*** Investigates common mechanisms of agent injury. Determines the toxic effects of agents by probable routes of field exposure, as well as standard experimental routes. Physiological parameters and pathological assessment will be used to establish the general mode and mechanism(s) of toxicity. Develops, assesses, evaluates, and validates therapeutics for treatment resulting from exposure to Non-Traditional Agents (NTA). ***FY 2011 Plans:***	-	13.000	12.970

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue binding studies to support the design and synthesis of an improved reactivator. Continue evaluation of improved products to treat NTA exposure. Continue investigation of pathophysiological effects to identify debilitating syndromes caused by exposure to NTAs. Continue development of animal models for various routes of exposure to NTA. These models will be utilized to evaluate toxic effects of NTAs, behavioral changes, efficacy, and FDA animal rule approvals. ***FY 2012 Plans:*** Continue binding studies to support the design and synthesis of an improved reactivator. Continue evaluation of improved products to treat NTA exposure. Continue investigation of pathophysiological effects to identify debilitating syndromes caused by exposure to NTAs. Continue development of animal models for various routes of exposure to NTA. Conduct in silico and in vitro evaluation of novel and/or Food and Drug Administration licensed products for treatment of NTA exposure. Study mechanisms of NTA injury for therapeutic intervention.			
Accomplishments/Planned Programs Subtotals	38.644	33.648	36.546

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TC1: *MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)*	6.027	3.144	0.000		0.000	0.000	0.000	0.000	0.000	0.000	9.171
• TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*	28.046	29.134	21.582		21.582	21.900	22.695	23.193	23.919	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*	1.818	2.884	0.806	-	0.806	0.605	0.603	0.379	0.335	Continuing	Continuing

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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Radiological Medical Countermeasures	1.818	2.884	0.806
Description: 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.			
FY 2010 Accomplishments: Evaluated mature and promising drug candidates for respiratory and gastrointestinal damage and repair, demonstrating efficacy, safety, and animal (rodents) survival exposed to lethal radiation for a future non-human primate (NHP) efficacy study. Identified common biochemical/physiological mechanisms for hematological, respiratory and gastrointestinal damage and repair, as well as, biology of cellular damage.			
FY 2011 Plans: Continue to evaluate novel and FDA-approved drugs for efficacy against radiation exposure maintaining a focus on potential mechanisms of action. These studies will help identify biochemical/physiological mechanisms that could be exploited for expanding the scope of potential therapeutic approaches. Continue to focus approaches on the GI and lung injury related to radiation exposure. Continue evaluation and identification of unique, novel and promising biomarkers useful for biodosimetry and potential pathways for therapeutic approaches.			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Further evaluate novel biomarkers useful for biodosimetry and identification of potential therapeutic approaches. Reduction in funds reflect changing priorities in the development of medical countermeasures.			
Accomplishments/Planned Programs Subtotals	1.818	2.884	0.806

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TR1: *MEDICAL RADIOLOGICAL DEFENSE (BASIC RESEARCH)*	0.925	0.971	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1.896
• TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*	4.086	0.957	0.000		0.000	0.200	0.200	0.434	0.484	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program										DATE: February 2011	
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)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	304.952	177.113	229.235	-	229.235	244.608	229.593	212.170	212.377	Continuing	Continuing
CB3: *CHEMICAL BIOLOGICAL DEFENSE (ATD)*	26.964	15.410	23.818	-	23.818	30.514	37.806	38.139	38.586	Continuing	Continuing
CI3: *CONGRESSIONAL INTEREST ITEMS (ATD)*	30.172	-	-	-	-	-	-	-	-	0.000	30.172
TB3: *MEDICAL BIOLOGICAL DEFENSE (ATD)*	196.007	115.233	172.636	-	172.636	180.913	167.900	149.413	148.398	Continuing	Continuing
TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*	28.046	29.134	21.582	-	21.582	21.900	22.695	23.193	23.919	Continuing	Continuing
TE3: *TEST & EVALUATION (ATD)*	12.296	11.875	11.199	-	11.199	11.081	0.992	0.991	0.990	Continuing	Continuing
TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*	4.086	0.957	-	-	-	0.200	0.200	0.434	0.484	Continuing	Continuing
TT3: *TECHBASE TECHNOLOGY TRANSITION*	7.381	4.504	-	-	-	-	-	-	-	0.000	11.885

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. This program element (PE) funds advanced technology development for Joint Service and Service-specific requirements in both medical and physical sciences CBR defense areas. The medical program aims to produce drugs, vaccines 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, the focus is on demonstrations of CB defense technologies, including biological detection, chemical detection, and decontamination. The work in this PE is consistent with the Joint Service CB Defense Research, Development, and Acquisition (RDA) Plan. This 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. This program is dedicated to conducting proof-of-principle field demonstrations, test of system-specific technologies to meet specific military needs. Work conducted under this PE transitions to and provides risk reduction for System Integration/ Demonstration (PE 0603884BP/PE 0604384BP) activities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	299.680	177.113	197.867	-	197.867
Current President's Budget	304.952	177.113	229.235	-	229.235
Total Adjustments	5.272	-	31.368	-	31.368
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.241	-			
• SBIR/STTR Transfer	-3.664	-			
• Other Adjustments	11.177	-	31.368	-	31.368

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: CI3: *CONGRESSIONAL INTEREST ITEMS (ATD)*		
Congressional Add: *Total Perimeter Surveillance (TPS)*	1.593	-
Congressional Add: *Handheld Automated Bio Agent Identifier*	2.390	-
Congressional Add: *Plant Vaccine Development*	1.593	-
Congressional Add: *Multi-Target Shipping Container Interrogation System Mobile Continuous Air Monitor*	1.593	-
Congressional Add: *Hand-Held Apparatus for Mobile Mapping and Expedited Reporting*	2.788	-
Congressional Add: *Regenerative Chemical Biological Filtration Systems*	2.689	-
Congressional Add: *Unified Management Infrastructure System*	0.797	-
Congressional Add: *CBDP Advanced Development*	1.992	-
Congressional Add: *Automated Sample Preparation (ASP) for Biological Detection*	0.797	-
Congressional Add: *High Speed, High Volume Laboratory Network for Infectious Disease*	1.593	-
Congressional Add: *Protective Self-Decontaminating Surfaces*	1.593	-
Congressional Add: *Chemical and Biological Threat Reduction Coating*	2.390	-
Congressional Add: *Self-decontaminating Polymer System for Chemical and Biological Warfare Agents*	2.788	-
Congressional Add: *Contaminated Human Remains Pouch*	1.593	-
Congressional Add: *Portable Rapid Bacterial Warfare Detection Unit*	3.983	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Congressional Add Subtotals for Project: CI3	30.172	-
Congressional Add Totals for all Projects	30.172	-

Change Summary Explanation

Funding: FY10 - Adjustments less than 10% of total program.

FY12 - Program realignments to support high priority CBDP and DoD program initiatives (+$2,400K CB3; +$47,244K TB3; -$8,819K TC3; -$38K TE3; -$949K TR3; -$8,117K TT3). Economic assumptions (-$32K CB3; -$274K TB3; -$30K TC3; -$17K TE3).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT CB3: *CHEMICAL BIOLOGICAL DEFENSE (ATD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CB3: *CHEMICAL BIOLOGICAL DEFENSE (ATD)*	26.964	15.410	23.818	-	23.818	30.514	37.806	38.139	38.586	Continuing	Continuing

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). Starting in FY11, all NTA-dedicated research will be re-aligned into specific capability areas within this project in order to ensure a focused effort on this high priority area. 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).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Protection & Hazard Mitigation	0.931	0.753	0.657
Description: Lightweight Integrated Fabric: Demonstration of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform. ***FY 2010 Accomplishments:*** Developed systems integration of a complete chemical and biological (CB) ensemble that incorporates emerging designs and prototype concepts. Refined concepts for an integrated ensemble that will transition to advanced development programs such as the Uniform Integrated Protective Ensemble (UIPE) and the Individual Protection Advanced Technology Demonstration (IP Demo - see Project TT3, Experimental & Technology Demonstration and Project TT4). Continued limited field trials in a relevant environment. ***FY 2011 Plans:*** Incorporate lessons from IP Demo and develop final data packages for transition to UIPE and/or Joint Service Lightweight Integrated Suit Technology (JSLIST) programs. ***FY 2012 Plans:*** Incorporate 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			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
may materialize. Provide a trade-space analysis of all government, industrial, and academic candidate materials for use in future UIPE phase initiations. Transition human performance initial tool set to JPM protection that can be used in the optimization of protective ensemble design.			
Title: 2) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2010 Accomplishments:*** Initiated brassboard prototype development efforts for the next generation filter for individual protection from CB agents, Toxic Industrial Chemicals (TICs) and Non Traditional Agents (NTAs), in efforts parallel to the IP Demo for collective protection filtration in support of advanced development programs such as the Joint Expeditionary Collective Protection (JECP) and support of collective protection in vehicular/platform systems in Major Defense Acquisition Programs (MDAP). ***FY 2011 Plans:*** Incorporate lessons from the IP Demo and develop final data packages for transition to advanced development programs such as the UIPE, Joint Service General Purpose Mask (JSGPM), and Joint Service Aircrew Mask (JSAM) (see BA5, Project IP5). Continue prototype development in support of JECP and support of collective protection in vehicular/platform systems in MDAP. ***FY 2012 Plans:*** Continue 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. Transition these technologies to the JSGPM and JSAM programs.	0.942	0.878	0.656
Title: 3) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2010 Accomplishments:*** Continued integration of the protective mask designs with developmental helmet systems to provide seamless compatibility of CB protection with ballistic protection, and the integration of communication and optical systems in parallel excursions to the IP Demo. ***FY 2012 Plans:***	0.768	-	0.703

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Advanced concept CBRN technologies will be 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.			
Title: 4) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2010 Accomplishments:*** Initiated breadboard prototypes development of down-selected media-less technologies. ***FY 2012 Plans:*** Demonstrate breadboard concepts of a residual life indicator (RLI) for collective filtration systems.	0.631	-	0.188
Title: 5) Protection & Hazard Mitigation ***Description:*** General Purpose Formulations for Decontamination: Demonstration of improved chemical and biological decontamination formulation that is compatible with the current family of decontamination systems. ***FY 2010 Accomplishments:*** Completed coupon tests, material compatibility and small item effectiveness evaluations for solid oxidants and green solvent/ surfactant systems. Transitioned to Decontamination Family of Systems program (see BA5, Project DE5).	0.980	-	-
Title: 6) Protection & Hazard Mitigation ***Description:*** Decontamination Family-of-Systems (DFoS): Demonstration of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. ***FY 2010 Accomplishments:*** Completed data package for self-decontaminating surfaces. Transitioned to the Hazard Mitigation for Materials and Equipment Restoration (HaMMER) Advanced Technology Demonstration (see Project TT3, E&TD). ***FY 2011 Plans:*** Complete additional data packages and technical assessments of technologies to transition to the Joint Program Manager for Decontamination (JPM-Decon) to be incorporated into the Decontamination Family of Systems (DFoS) Program of Record. ***FY 2012 Plans:***	0.272	0.377	1.173

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue demonstration of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. Integrate robust surface chemistry and decontamination process analysis using ultra high vacuum system into technology maturation process for hazard mitigation. Demonstrate integrated decontaminant test and evaluation system (IDTES) live agent testing facility that allows scaled relevant environment evaluations. Pursue the optimization of reactive coatings (durable). Transition research efforts "Surfactant Technology for Surface Chemical/Biological Agent Removal" and "Decontamination Assurance Spray."			
Title: 7) Protection & Hazard Mitigation ***Description:*** 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. ***FY 2011 Plans:*** Focus efforts on most promising approaches and initiate component development to support prototyping and demonstrations. Technologies may include micro fine detoxifying aerosol fogs to facilitate entry and mitigate cross contamination into collective protection systems, internal self-detoxifying surfaces for walls and ductwork, expedient retrofit kits, self-detoxifying and expedient strippable coatings, rapid isolation and purge schemes, and novel and innovative air flow and re-circulation schemes. ***FY 2012 Plans:*** Continuation of Innovative Systems Concepts and Analysis. Transition research effort "Reactive Airlock for Armored Vehicles, Shipboard and Shelter Applications."	-	0.624	0.334
Title: 8) Information Systems Technology ***Description:*** 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. ***FY 2010 Accomplishments:*** Transitioned enhanced version of first-generation building interior Source Term Estimation (STE) and Hazard Refinement (HR) software to the Joint Effects Model (JEM). ***FY 2011 Plans:***	1.000	1.054	1.288

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Transition next-generation outdoor STE, HR, and Sensor Placement Tool (SPT) to advanced development programs (JEM - see BA5 Project IS5). Transition first-generation false alarm reduction capability and first generation rapid STE algorithms to advanced development program (JWARN). ***FY 2012 Plans:*** Initiate Verification and Validation (V&V) of STE and HR algorithms for use in complex environments (e.g., variable terrain, urban, water, and building interiors). Transition first-generation false alarm reduction capability. Transition report on the use of meteorological ensemble predictions in dispersion models.			
Title: 9) Information Systems Technology ***Description:*** Hazard Prediction & 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 chemical, biological, and industrial materials from weapons and accidents. ***FY 2010 Accomplishments:*** Continued further refinements of the Geographic Environmental Database and Information System (GEDIS) data requirements tool with additional types of data such as climatology and population. Completed urban dispersion modeling for transition into JEM. Developed and implemented the configuration management prototype for transition of project results to advanced development programs. ***FY 2011 Plans:*** Continue further refinements of the GEDIS data requirements tool. Complete optimization of methods to significantly improve performance of transport and dispersion hazard models for JEM. Continue development and implementation of a configuration management prototype for transition of project results to advanced development programs. Continue advanced development of JEM algorithms to portray and predict Non-Traditional Agent (NTA) hazards in operational environments. ***FY 2012 Plans:*** Further develop the high altitude post-missile intercept effects model for 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. Continue with work on configuration management prototype to establish upgraded capabilities listed as valid requirements for JEM.	2.932	1.961	0.913
Title: 10) Information Systems Technology	0.412	0.427	1.465

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: 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. ***FY 2010 Accomplishments:*** Transitioned sensor placement tool to acquisition programs. Transitioned CB effects on mobile forces analysis study and prototype for tactical and operational military operations. Transitioned improved Incident Management/Consequence Management (IM/CM) tools and capabilities to advanced development programs. ***FY 2011 Plans:*** Transition decision support tools for CBRN to the Joint Warning and Reporting Network (JWARN). Transition refined secondary infection and contagious/infectious disease models to the Joint Effects Model (JEM). Transition updated and expanded human effects models. Transition IM/CM tools and capabilities in consequence systems. Transition a fully optimized sensor placement tool. ***FY 2012 Plans:*** Begin development of next generation consequence management software tools that can help to inform both military and civilian first responder commanders regarding (1) CM plan development; (2) shelter-in-place vs evacuation decisions; and (3) operations effects. Develop a route-planning decision aid.			
Title: 11) Information Systems Technology ***Description:*** Systems Performance & Information Analysis: Develop Chemical, Biological, Radiological and Nuclear (CBRN) data sharing capabilities. ***FY 2010 Accomplishments:*** Completed prototyping a data collection and exchange capability. Developed processes and policies for collection and insertion of data into CBRN data management efforts. ***FY 2012 Plans:*** Perform improvements in CBRN data management capabilities, with emphasis on enabling access to information for analysis within CBDP systems performance models. Further enhance analysis toolset which provides the ability to evaluate decontaminants and decontamination systems.	0.100	-	0.350
Title: 12) Information Systems Technology	0.100	-	0.877

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Medical Surveillance & 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 including casualty estimation, agent-based epidemiological modeling and fusion of disease surveillance data. ***FY 2010 Accomplishments:*** Verified respiratory tract models for prediction of human response as a function of particle size to improve casualty estimation for CBRN hazards and prepared these models for incorporation into the Joint Effect Model (JEM) for currently available agent data. Transitioned infection/contagious disease model to JEM. ***FY 2012 Plans:*** Transition medical resource estimation and medical countermeasure models. Begin effort to V&V existing agent-based epidemiological models, to include underlying population data and disease spread algorithms, with regard to use in robust adaptive decision making.			
Title: 13) Detection ***Description:*** Detection Capabilities for Non-Traditional Agents: Develop detection technologies for Non-Traditional Agents. In FY11, all NTA-related efforts re-aligned to the Detection NTA capability area located in this Budget Activity. ***FY 2010 Accomplishments:*** Continued developing supporting technologies and protocols to meet the Initial Operating Capabilities of the Next Generation Test Facility at the Edgewood Chemical and Biological Center.	1.985	-	-
Title: 14) Detection ***Description:*** 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. ***FY 2010 Accomplishments:*** Conducted a Technology Readiness Assessment and transitioned active IR and depolarization technologies as a candidate for JBSDS Increment 2. Initiated field trials to validate chemical signature for chemical standoff detection and identification capabilities. Initiated an analysis of alternatives to support efforts in meeting new requirements for the next generation of standoff	11.811	0.496	7.757

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
chemical technology. Initiated efforts in the development of new test methodology for assessing next generation chemical standoff technology to include ground truth systems for field assessments. ***FY 2011 Plans:*** Complete field trial validation of chemical signatures for chemical standoff detection and identification capabilities. Continue development of test methodology for next generation chemical standoff technology. Initiate the process of validating ground truth systems for field assessments. ***FY 2012 Plans:*** Continue development of test methodology for next generation chemical standoff technology. Continue the process of validating ground truth systems for field assessments.			
Title: 15) Detection NTA ***Description:*** Detection NTA: Focuses on technologies to provide NTA detection capabilities. ***FY 2011 Plans:*** Complete the supporting efforts necessary to provide the Initial Operating Capabilities for test facilities. The effort will focus on detection and analytical methodologies to determine sensitivities/thresholds necessary to establish exposure standards needed to create standard operating procedures for the facility. ***FY 2012 Plans:*** Initiate the development of test methodology to validate signatures for chemical aerosols threat materials.	-	4.200	7.457
Title: 16) Technology Transition ***Description:*** Technology Transition - Conduct competitive assessments of promising mature technology from outside the Chemical and Biological Defense Program (CBDP) and assist in transition of promising technology efforts. ***FY 2010 Accomplishments:*** Continued transition of the Integrated CB Agent Hazard Mitigation with systems and neutralization efficiency testing in a laboratory environment. Continued competitive assessment of all mature technology from outside of the CBDP for rapid technology insertion into the capability areas. ***FY 2011 Plans:***	4.100	4.640	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete transition of the Integrated CB Agent Hazard Mitigation with systems and neutralization efficiency testing in an operational environment. Complete assessment and down-select to two or three best technologies that provides the highest enhancements to capabilities.			
Accomplishments/Planned Programs Subtotals	26.964	15.410	23.818

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	39.396	63.347	33.952		33.952	28.703	24.178	37.476	27.930	0.000	254.982
• CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	110.937	88.897	97.774		97.774	94.721	89.677	90.823	108.941	Continuing	Continuing
• DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	14.867	7.051	38.737		38.737	30.608	6.430	7.383	12.553	Continuing	Continuing
• IS4: *INFORMATION SYSTEMS (ACD&P)*	13.914	11.221	7.420		7.420	14.682	0.000	0.000	0.000	0.000	47.237
• TE3: *TEST & EVALUATION (ATD)*	12.296	11.875	11.199		11.199	11.081	0.992	0.991	0.990	Continuing	Continuing
• TE4: *TEST & EVALUATION (ACD&P)*	28.412	19.304	5.438		5.438	16.232	12.461	18.369	19.296	Continuing	Continuing
• TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*	24.937	26.466	3.022		3.022	3.923	4.758	8.467	9.075	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CI3: *CONGRESSIONAL INTEREST ITEMS (ATD)*	30.172	-	-	-	-	-	-	-	-	0.000	30.172

A. Mission Description and Budget Item Justification

The efforts listed in this project include congressional interest programs for FY10.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Total Perimeter Surveillance (TPS) ***FY 2010 Accomplishments:*** Developed a Total Perimeter Surveillance (TPS) solution based on infrared spectroscopy that can provide complete perimeter threat detection and identification with sufficient advanced warning to key DoD infrastructure.	1.593	-
Congressional Add: Handheld Automated Bio Agent Identifier ***FY 2010 Accomplishments:*** Developed a multiplex handheld immunoassay tickets that are both human visually and machine read. This effort utilized an existing immunoassay ticket format to develop nucleic acid-based rapid assays capable of identifying biological agents by species, genus or other category/grouping (e.g., bacteria, toxin, virus). Such a nucleic acid assay will be read by a handheld reader through a "one-button" operation process.	2.390	-
Congressional Add: Plant Vaccine Development ***FY 2010 Accomplishments:*** Developed vaccine lots under cGMP and evaluated safety and toxicity and confirmed protective efficacy of identified dual agent vaccines. Developed technology transfer and implementation programs.	1.593	-
Congressional Add: Multi-Target Shipping Container Interrogation System Mobile Continuous Air Monitor ***FY 2010 Accomplishments:*** Developed an air monitoring system for shipping containers, capable of performing multiple bioassays for live organisms and toxins simultaneously, efficiently, accurately and extremely fast.	1.593	-
Congressional Add: Hand-Held Apparatus for Mobile Mapping and Expedited Reporting ***FY 2010 Accomplishments:*** Developed a tool that enables a rapid, accurate, efficient, low-cost, collection, analysis and dissemination of digital data from multiple sensor suites and rapid reporting for improved situational awareness.	2.788	-
Congressional Add: Regenerative Chemical Biological Filtration Systems	2.689	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
FY 2010 Accomplishments: Developed a regenerative filtration system to reduce costs and provide protection against all chemical warfare agents for military personnel, critical equipment, and strategic facilities. The objective of this project is to mature the technology of regenerable chemical warfare collective protection.		
Congressional Add: Unified Management Infrastructure System ***FY 2010 Accomplishments:*** Developed a secure communication platform to meet military needs in a chemical biological environment, protecting soldiers and first responders on the battlefield using secure mobile communication systems by simultaneously providing what is currently unprecedented: real-time, accurate monitoring of the military's communication devices.	0.797	-
Congressional Add: CBDP Advanced Development ***FY 2010 Accomplishments:*** Conducted advanced development to develop a sensor core adapted from new technology based on high performance Liquid Chromatography detection of molecular interactions on nanostructured surfaces.	1.992	-
Congressional Add: Automated Sample Preparation (ASP) for Biological Detection ***FY 2010 Accomplishments:*** Developed ASP technology to address the challenges of sample preparation for the detection/diagnosis of biological warfare agents. The ASP technology has the ability to process both environmental and clinical biological samples for subsequent analysis on both nucleic acid and/or immunoassay detection/diagnostic systems to detect and identify hundreds of potential targets simultaneously within a single analysis on a single detection/diagnostic platform.	0.797	-
Congressional Add: High Speed, High Volume Laboratory Network for Infectious Disease ***FY 2010 Accomplishments:*** Developed a new high speed, high throughput bioagent screening and genotyping capability that will be able to conduct large scale, data driven research. This resource could be linked with military, government and public institutions and identify epidemiologic and genotypic information of influenza viruses, emerging infectious diseases and bioterrorism.	1.593	-
Congressional Add: Protective Self-Decontaminating Surfaces ***FY 2010 Accomplishments:*** Improved singlet oxygen technology for self-decontaminating surfaces.	1.593	-
Congressional Add: Chemical and Biological Threat Reduction Coating	2.390	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
FY 2010 Accomplishments: Developed a textile laminate that incorporates multifunction fabrics into a textile system including a self-decontaminating fabric layer, a membrane to protect against biological threats, and a sorbent layer.		
Congressional Add: Self-decontaminating Polymer System for Chemical and Biological Warfare Agents ***FY 2010 Accomplishments:*** Enhanced the properties of self-decontaminating materials by defining the relevant mechanisms through experimental and theoretically evaluation of the fundamental characteristics. Continue evolution of these materials through proven engineering approaches.	2.788	-
Congressional Add: Contaminated Human Remains Pouch ***FY 2010 Accomplishments:*** Developed, optimized, and produced an improved gas-tight, liquid-impervious, odor-proof, fluid-absorbing, self decontaminating, and transportable Enhanced Contaminated Human Remains Pouch (ECHRP).	1.593	-
Congressional Add: Portable Rapid Bacterial Warfare Detection Unit ***FY 2010 Accomplishments:*** Used DNA profiling to identify the microorganisms of military significance by obtaining genomic information needed for identification without performing the complicated and expensive sequencing protocols. Optimized these devices for field deployment.	3.983	-
Congressional Adds Subtotals	30.172	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CI1: *CONGRESSIONAL INTEREST ITEMS (BASIC RESEARCH)*	7.968	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	7.968
• CI2: *CONGRESSIONAL INTEREST ITEMS (APPLIED RESEARCH)*	27.186	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	27.186

D. Acquisition Strategy

N/A

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E. Performance Metrics

N/A

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TB3: *MEDICAL BIOLOGICAL DEFENSE (ATD)*	196.007	115.233	172.636	-	172.636	180.913	167.900	149.413	148.398	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project (TB3) 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. 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 also includes efforts such as the Transformational Medical Technologies Initiative (TMTI). Effective FY12 this effort is funded as the Transformational Medical Technologies (TMT) Program. 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).

The Medical Countermeasures Initiative (MCMI) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, based on public-private parternship agreements 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 three areas: 1) 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.

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Diagnostics (Biosurveillance)	11.109	9.845	10.328

Description: 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.

FY 2010 Accomplishments:
Continued development of two additional candidates for a next generation diagnostic device. Developed an automated, prototype polymerase chain reaction system on microarray cartridge using light emitting chemical-based (or other sensitive signal-amplified) technology. Continued to refine and transition strain test panels for viral specificity (inclusivity and exclusivity) characterization. Characterized assay specificity to ensure assays consistently identify the intended target but not related targets. Used highly parallel and informative microarray screening techniques with thoroughly characterized affinity reagents for the discovery of novel biomarkers of host response as targets for assay development. Developed and verified assays as per standardized processes. Transitioned pilot production protocols for biosynthetic (recombinant) antigen production for bacterial BWAs. Maintained an animal tissue bank for validation of assay performance and as correlate reference materials from animal BWA exposure studies. Developed and verified single domain biosynthetic (recombinant) antibodies to bacterial and viral BWA targets. Investigated methods of stabilization of BWA biomarkers in clinical samples to extend transport and limit cold chain requirements.

FY 2011 Plans:
Use decision-based matrix and technology evaluation centers to transition two Technology Readiness Reviews on candidate diagnostic platforms to advanced development programs. Develop atlas/database of phenotypic and genotypic characteristics of relevant BWA bacterial strains. Demonstrate the utility of high informatic content screen-characterized affinity reagents in the discovery of novel biomarkers as targets for assay development. Develop standard methods/protocols for rapid sequencing directly from clinical matrices. Apply bioinformatic and computational methods to verify the utility of host response signatures for pre-symptomatic diagnostic assays. Transition candidate transport media/preservatives and protocols for clinical sample processing. Evaluate developed global-virus and global-microbial microarrays for promising multiplexing and identification of BWAs. Develop and verify production scale-up protocols for single domain biosynthetic (recombinant) antibodies to bacterial and viral BWA targets.

FY 2012 Plans:
Validate and submit pre-EUA (Emergency Use Authorization) data to FDA for high priority BWA and emerging threat assays to preposition for biopreparedness. Transition portable sequence based genetic analyzer and verify assays for top ten priority agents. Transition technology watch report and mature candidate platform technologies of sufficient utility for advanced development as Next Generation Diagnostics System and/or Biosurveillance platform. Transition data packages for detection of

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
antibiotic (Cipro) resistance. Validate and transition scale-up protocols for single domain biosynthetic (recombinant) antibodies to bacterial and viral BWA targets for use in austere environments. Supplement/continue accrual of geographically/genetically representative strain collection and transfer to repository; develop quantitative cell culture for an additional emerging threat agent of high genetic variability. Transition atlas/database of phenotypic and genotypic characteristics of relevant BWA bacterial strains to advanced developer.			
Title: 2) Pretreatments ***Description:*** Bacterial/Toxin Vaccines: Evaluates the best single agent bacterial and toxin vaccines for effectiveness against aerosol challenge in large animal models. ***FY 2010 Accomplishments:*** Planned, prepared and conducted a Phase I clinical trial with the Ricin vaccine. ***FY 2011 Plans:*** Complete the Phase I clinical trial with the Ricin Vaccine. ***FY 2012 Plans:*** Perform final analysis of data from Phase I Clinical trial. Assemble final Ricin vaccine data package.	0.984	0.937	0.799
Title: 3) Pretreatments ***Description:*** 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". ***FY 2010 Accomplishments:*** Initiated studies to develop/validate animal models for VEE, EEE, and WEE vaccines, as well as for filovirus vaccines, to fulfill future FDA animal rule requirements necessary for vaccine licensure. Tested chemically inactivated and deoxyribonucleic acid (DNA) vaccine candidates against VEE, EEE, and WEE for effectiveness against aerosol delivered doses in animals. Conducted dose, schedule, and aerosol challenge studies in animals with Ebola vaccine candidates. Transitioned two Marburg virus vaccine candidates to advanced development programs, and determined protection duration studies on these two candidates. Conducted studies to further evaluate the effectiveness of combining the individual filoviruses (i.e., Ebola Sudan, Ebola Zaire, Ebola Uganda, and Marburg Angola) vaccines into one multi-agent vaccine. Conducted studies to further evaluate the effectiveness of combining the individual alphavirus (i.e., VEE, EEE, and WEE) vaccines into one multi-agent vaccine. ***FY 2011 Plans:***	14.621	10.304	19.930

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete duration studies with the vaccine components against Marburg that transitioned to the advanced development program in FY10. Complete aerosol efficacy studies for the Ebola Zaire and Ebola Sudan vaccine components in non-human primates. Transition the Ebola vaccine components to the advanced development program to combine with the Marburg vaccine component. Determine duration of protection elicited by the Ebola vaccine components. Optimize the dose and immunization schedule to ensure effectiveness of the individual components of the filovirus vaccine when co-administered as a mixture. Complete aerosol efficacy studies of DNA-based vaccines and chemically inactivated/attenuated vaccines against the alphaviruses. Optimize dosing regimens to ensure effectiveness when co-administering the alphavirus vaccine components. Continue the development of animals 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. For Alphaviruses, determine the median lethal dose of VEE, EEE, and WEE in a distinct type of non-human primate, and test the alphavirus vaccines for immune stimulation capability and efficacy against challenge in this new animal model. For filoviruses, determine the median lethal dose of Ebola Bundibugyo in a distinct type of non-human primate, and begin natural history studies for Ebola Bundibugyo, Ebola Sudan, Ebola Zaire, and Marburg. ***FY 2012 Plans:*** Complete duration studies with the vaccine components against Ebola that transitioned to the advanced development program in FY11. Complete remaining aerosol efficacy studies for the Ebola Zaire and Ebola Sudan vaccine components in non-human primates. Conduct formulation studies of Ebola and Marburg vaccine components. Coordinate with the advanced developer to fulfill S&T needs in support of the filovirus vaccine transition. For Alphavirus DNA vaccines, complete an IND package for the VEE component, submit the IND package to the FDA and initiate a Phase I clinical trial. Manufacture clinical grade (sufficient quality to be administered to humans in a Phase I clinical trial) lots of the EEE and WEE DNA components. Conduct pre-clinical studies on a trivalent VEE, EEE, WEE DNA formulation. For the Alphavirus replicon vaccine, complete an IND package and submit it to the FDA. Continue the development of animals 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 are transitioning to CBMS in FY11, work will continue on the selected candidate(s) in coordination with CBMS to fill knowledge gaps.			
Title: 4) Pretreatments ***Description:*** 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	1.722	4.371	4.993

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Platforms and Research Tools utilize novel technologies to stabilize advanced vaccine candidates as well as alternative delivery modalities. ***FY 2010 Accomplishments:*** Researched multiagent vaccines, immune interference, immune stimulating formulations, vaccine delivery/stabilization to predict the human immune response to vaccine candidates. Initiated studies to examine potential immune interference between vaccines (e.g., filovirus interference with alphavirus vaccines; anthrax interference with plague vaccine, etc.) developed by the Department of Defense (DoD). Evaluated mature Marburg vaccine candidates ready for transition to the advanced developer using the laboratory based human artificial immune system (i.e., MIMIC) technology. ***FY 2011 Plans:*** Examine the efficacy of a mature filovirus vaccine in animals previously vaccinated with a mature alphavirus vaccine that was constructed using the same platform technology, to reveal potential immune interference in order to determine whether multiple vaccines using the same platform technologies can be used together. Analyze blood samples collected from individuals in the Former Soviet Union (i.e., vaccinated laboratory workers and/or individuals infected with bio-defense agents endemic to the region) in laboratory assays to determine the antibody and cell-based immune responses elicited by vaccines and/or pathogens of interest, and compare those results to animal studies. Evaluate the safety and immune stimulating capability of mature Filovirus and Alphavirus vaccine candidates in humans by using the MIMIC technology, to support these candidates moving forward into phase I clinical studies by the advanced development program. Conduct pre-formulation studies to produce a thermo-stable, spray-dried formulation of the virus-like particle based Marburg vaccine candidate. ***FY 2012 Plans:*** Continue evaluation of the safety and immune stimulating capability of mature Filovirus and Alphavirus vaccine candidates in humans by using the MIMIC technology. Continue formulation studies to produce a thermo-stable, spray-dried formulation of the virus-like particle based Marburg vaccine candidate. Evaluate additional stabilization technologies that provide thermal stability to multiple classes of vaccines such as viral vectored vaccines and subunit protein vaccines. Test alternative (needle-free) vaccine delivery technologies such as inhalers or skin patches for the delivery of mature vaccine candidates. Evaluate clinical samples from filovirus and alphavirus outbreaks in multiple international locations to determine human immune responses.			
Title: 5) Medical Countermeasures Initiative (MCMI) ***Description:*** The MCMI will begin to integrate the regulatory science and manufacturing technologies and processes developed into the Technical Centers of Excellence (TCE) and advanced development and flexible manufacturing capability. ***FY 2012 Plans:***	-	-	27.581

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate and refine development of multi-product/multi-use MCM technology platforms for the advanced development of MCMs for CBRN threats and emerging infectious diseases. Evaluate and exploit the regulatory advantages of such systems, with the intent that regulatory approval of the platform for one product will simplify subsequent regulatory approvals of other products based on the same system. Initiate and refine development of new technologies and approaches that facilitate and accelerate the development and regulatory review of medical products.			
Title: 6) Therapeutics ***Description:*** Viral Therapeutics: Identifies, optimizes and evaluates potential therapeutic candidates effective against designated viral threat agents. ***FY 2010 Accomplishments:*** Conducted non-human primate studies to determine if anti-inflammatory and anti-thrombotic host factors can be used therapeutically to produce a restorative effect on the blood vessel walls and increase survival from filovirus infection. Conducted remaining FDA required non-human primate studies necessary to complete the development of oral therapeutics for orthopox viral infection. Evaluated the efficacy of administering post-exposure therapeutic vaccine in conjunction with therapies that stop blood clotting in animals infected with filovirus. Continued animal studies to support FDA submissions, milestone approval, and product transition to advanced development. ***FY 2011 Plans:*** Conduct remaining non-human primate studies required for licensure of ST-246, a low-molecular-weight compound that is active against multiple orthopoxviruses. Conduct toxicology studies and analyze efficacy of optimized lead compounds against alphavirus infection in murine and non-human primate challenge models. Characterize the clinical manifestations and virologic/ immunologic parameters of human monkeypox. Determine the effectiveness of pan-alphavirus capsid assembly inhibitors in animal models. ***FY 2012 Plans:*** Evaluate immunotherapies for filoviruses in non-human primate models. Continue evaluation of optimized lead compounds against alphaviruses in animal models of infection. Continue evaluation of filovirus vaccines as treatments for post-exposure filovirus infection. Evaluate FDA approved drug combinations for efficacy against alphaviruses in animal models of infection. Initiate a screening program to determine efficacy of FDA approved compounds against emerging infectious diseases (i.e. alphavirus, filovirus, flavivirus, arenavirus, bunyavirus).	9.577	9.519	6.590
Title: 7) Therapeutics	2.638	2.700	3.795

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Bacterial Therapeutics: Identifies, optimizes, and evaluates potential therapeutic compounds effective against bacterial threat agents. ***FY 2010 Accomplishments:*** Tested and evaluated the effectiveness of commercially available antibiotics against animals exposed to aerosol versions of plague and tularemia. Determined antibiotic susceptibility profiles for Yersinia pestis and Francisella tularensis in the laboratory. ***FY 2011 Plans:*** Determine the effectiveness of commercially available antibiotics against Francisella tularensis in relevant animal infection models. ***FY 2012 Plans:*** Evaluate Protein Design Process optimized anthrax capsule depolymerase (CapD) in murine challenge models of anthrax infection. Transition data package demonstrating efficacy of FDA approved compounds against lethal challenge of aerosolized Y. pestis in nonhuman primate models. Conduct studies to determine efficacy against FDA approved compounds against Burkholderia, Francisella tularensis in murine animal models. Evaluate small molecule inhibitors targeting Y. pestis ATPase enzyme in small animal models.			
Title: 8) Therapeutics ***Description:*** Toxin Therapeutics: Identifies, optimizes and evaluates potential therapeutic candidates effective against biological toxin threat agents. ***FY 2010 Accomplishments:*** Initiated work to develop antitoxin preparation for Ricin and Staphylococcal Enterotoxin B (SEB). Defined the therapeutic parameters for Ricin and SEB therapeutic. Tested candidate botulinum neurotoxin (BoNT) small molecule therapeutics in animal challenge models. Performed advanced animal testing on small molecules that are protective against a lethal challenge of SEB in relevant animal models. ***FY 2011 Plans:*** Test and evaluate FDA approved immunomodulating drugs against exposure to SEB. Develop and determine the therapeutic window of opportunity for novel inhibitors of SEB pathogenesis. Determine initial safety profile and conduct genotoxicity studies for BoNT inhibitors with the goal of improving physiochemical properties and mitigating product liabilities through the use of medicinal chemistry. Conduct pre- and post-challenge of efficacy studies of optimized BoNT inhibitors in mice. Evaluate efficacy of BoNT lead inhibitors using a targeted delivery system in mice. ***FY 2012 Plans:***	0.886	1.500	2.184

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue evaluation of FDA approved immunomodulating agents to treat SEB. Initiate a screening program to determine efficacy of FDA approved compounds against BoNT intoxication. Continue evaluation of novel optimized SEB and BoNT inhibitors in small animal models of infection.			
Title: 9) Transformational Medical Technologies Initiative ***Description:*** Multiagent (Broad Spectrum) Medical Countermeasures: Focuses on the initiation and completion of multiple preclinical studies for each new drug, to include safety, toxicity, efficacy, and scalability work in accordance with the product's intended use. The ability to formulate good manufacturing 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), which conducts reviews and approves new drug candidates. Estimated attrition from preclinical phase to Phase I clinical studies is approximately 50%, thus not all drugs will survive the transition between preclinical development and Phase I studies. Starting in FY10, TMTI initiated an effort targeting Emerging Infectious Diseases (EID), beginning with pandemic influenzas. ***FY 2010 Accomplishments:*** Continued to identify potential IND candidate drugs for development. Completed pre-clinical research necessary to submit up to seven additional applications for an IND with the FDA. Following submission of an IND to the FDA for further evaluation, a DoD Milestone A Decision Review for the Hemorrhagic Fever Virus Class took place. Initiated planning for Phase 1 clinical trials and other studies necessary to support advanced development efforts toward a New Drug Application (NDA) with the FDA. Completed investigating use of existing of FDA-approved drugs to enhance effectiveness of current BW agent countermeasures. Initiated preclinical research to support IND submission for an EID candidate. ***FY 2011 Plans:*** Complete pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications. As MCMs effective as post-exposure prophylaxis and treatment against IBP are matured, an initial DoD Milestone A decision will take place for the IBP Group of MCMs. Initiate 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 in the S&T phase of development. This includes exploratory research, identification of supported in the Technologies Portfolio; investment strategy changed for FY11 and beyond to mitigate risk associated with seeking in vivo potency and efficacy critical to the likely product development path, determining dose-response, and the optimal route of administration and timing/schedule of administration of product in relevant animal efficacy models.	101.520	63.135	-
Title: 10) Transformational Medical Technologies Initiative	52.950	12.922	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Development of Platform Technologies: 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 Discovery, Countermeasure Evaluation, and Bioinfomatics. Focuses 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 development capabilities. Advanced manufacturing platforms will continue to mature and the technology application will focus on the type of specific therapeutics under development. ***FY 2010 Accomplishments:*** Conducted initial studies to determine dose-response, optimal route of administration and timing/schedule of administration of product in relevant animal efficacy models. Initiated development of the bioinformatics platform, to integrate the various TMT platforms by electronically structuring all TMTI data for rapid access and analysis. Continued development of rapid drug discovery and development platform technologies. Accelerated effort to develop and scale-up new rapid manufacturing platform technologies for biological drugs. Development efforts began to bring these technologies into compliance with FDA current good manufacturing practices (cGMP) and quality requirements. Began generation of Technology Development Strategies that will assist in the development of a roadmap to support efforts that transition to engineering, manufacturing, and development efforts in Budget Activities 4 and 5. Began integration of stand-alone platforms into capabilities that can be demonstrated as a system. Began validation of test platforms for drug discovery, development and manufacturing technologies that allow the incorporation of medical countermeasure technologies into the TMTI rapid response capability. Supported computer models to advance/enhance drug design. High throughput screening assays and technologies and novel platforms for target identification were investigated. ***FY 2011 Plans:*** Continue integration of standalone platforms into capabilities that can be demonstrated as a system. Continue the development of rapid drug discovery and development platform technologies. Integrate the entire system using a robust bioinformatics capability, and validate the integrated bioinformatics platform. Continue to mature and accelerate manufacturing platform technologies for biological drugs to comply with regulatory guidelines. Support compliance and quality measures that are mandatory for future FDA submissions. Continue to integrate pathogen characterization, target identification, countermeasure discovery and countermeasure evaluation platform areas into a rapid response capability supported by a centralized bioinformatics capability that ties together geographically separated performers from government agencies, industry and academia.			
Title: 11) Transformational Medical Technologies	-	-	62.851

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Multiagent (Broad Spectrum) Medical Countermeasures: Continues efforts previously funded under the Transformational Medical Technologies Initiative to develop candidate countermeasures for HFV and 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. Starting in FY10, TMT initiated an effort targeting Emerging Infectious Diseases (EID), beginning with pandemic influenzas. ***FY 2012 Plans:*** 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 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 in the S&T phase of development, incorporating feedback from the FDA and Services into requirements.			
Title: 12) Transformational Medical Technologies ***Description:*** 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 Discovery, Countermeasure Evaluation, and Bioinfomatics. Focuses 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 development capabilities. Advanced manufacturing platforms will continue to mature and the technology application will focus on the type of specific therapeutics under development. ***FY 2012 Plans:*** Investment to fund Bio-Surveillance efforts and integrate stand-alone platforms into system-wide capabilities. Further develop rapid drug discovery and development platform technologies, and build upon early success to fully integrate the entire system using robust bioinformatics capabilities, validating the integrated bioinformatics platform. Increase investment to mature and accelerate manufacturing platform technologies for biological drugs to comply with regulatory guidelines. Support compliance and	-	-	33.585

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
quality measures that are mandatory for future FDA submissions. Fully integrate 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 together from government agencies, industry and academia.			
Accomplishments/Planned Programs Subtotals	196.007	115.233	172.636

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	95.483	136.975	137.653		137.653	150.128	167.604	133.589	119.626	Continuing	Continuing
• MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	57.563	141.680	272.345		272.345	259.039	354.900	331.308	310.104	Continuing	Continuing
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	0.000	0.000	5.448		5.448	0.492	0.493	8.851	15.459	Continuing	Continuing
• TB2: *MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	54.858	43.858	84.747		84.747	85.493	76.011	52.527	75.583	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*	28.046	29.134	21.582	-	21.582	21.900	22.695	23.193	23.919	Continuing	Continuing

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 FY11, all NTA-dedicated research was re-aligned into specific capability areas within this project in order to ensure a focused effort on this high priority area.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Diagnostics	2.438	0.226	0.262
Description: 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.			
FY 2010 Accomplishments: Furthered development of improved reactivation and solvent-free extraction methodologies for definitive CWA byproduct identification. Determined windows of opportunity for biomarker identification and subsequent therapeutic intervention for CWA in laboratory and animal models.			
FY 2011 Plans: Optimize the methodology for solvent free extraction of CWA mixtures. Complete blood and urine assay development for CWA exposure. Complete validation of fluoride regeneration method in plasma/blood/RBCs with solid phase extraction for nerve agents. All NTA-specific efforts re-aligned to the Chemical Diagnostics NTA capability area within this Project.			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Refine methods and expression systems for large-scale production and purification of bioscavengers. Further test improved bioscavenger delivery methods and retention approaches in animal models, including physiologically based pharmacokinetics. Further develop binding proteins in animal models for safety and efficacy.			
Title: 2) Chem Diagnostics NTA ***Description:*** Focuses on state-of-the-art laboratory/fieldable methods that detect exposure to non-traditional agents in clinical samples. It also targets the identification of biomolecular targets that can be leveraged as analytical methodologies, as well as, laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker. ***FY 2011 Plans:*** Continue evaluation of mature technologies that can quickly diagnose NTA exposure before symptoms appear and determine the type of agent. ***FY 2012 Plans:*** Continue evaluation of mature technologies that can quickly diagnose pre-symptomatic NTA exposure.	-	0.400	0.599
Title: 3) Pretreatments ***Description:*** 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. ***FY 2010 Accomplishments:*** Developed formulations for improved pharmacokinetic and reduced immune system stimulation for enzymes. Investigated improved drug-delivery systems for 1st generation enzymes. Conducted supportive studies toward licensure of enzymes. ***FY 2011 Plans:*** Apply physiologically based pharmacokinetics (PBPK) models to improved catalytic bioscavengers. Continue to test improved catalytic bioscavenger delivery methods and retention systems in animal models. Continue to develop binding proteins in animal models for safety and efficacy, using animal testing to down-select candidates for further development. ***FY 2012 Plans:***	3.823	7.861	1.869

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TC3: *MEDICAL CHEMICAL DEFENSE (ATD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Refine methods and expression systems for large-scale production and purification of enzymes. Further test improved pretreatment delivery methods and retention approaches in animal models, including physiologically based pharmacokinetics (PBPK). Further develop binding proteins in animal models for safety and efficacy.			
Title: 4) Chem Pretreatments NTA ***Description:*** Develop nerve agent enzyme pretreatments that provide protection against non-traditional agents. Enzymes should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high catalytic efficiency for the destruction of agents. For enzyme approaches, one molecule of catalytic bioscavenger should be capable of detoxifying numerous molecules nerve agents resulting in the capability for a small quantity of catalytic bioscavenger to protect against a large dose of nerve agent. ***FY 2012 Plans:*** Further test improved nerve agent enzyme pretreatment delivery methods and retention approaches in animal models, including physiologically based pharmacokinetics. Further develop binding proteins in animal models for safety and efficacy. This work represents a continuation of efforts that were initiated in previous years under the TC3 Chemical Pretreatments capability area prior to the Chemical Pretreatments NTA capability area being established in FY12.	-	-	0.996
Title: 5) Therapeutics ***Description:*** 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. ***FY 2010 Accomplishments:*** Evaluated commercial off-the-shelf irrigation systems for treatment of CWA exposure in the laboratory and animals. Continued animal studies to examine long-term effects of wound healing products. Down-selected newly identified therapeutics with potential for treating mustard agent-induced ocular injury. Began efficacy testing in compliance with FDA regulations for ocular administration. ***FY 2011 Plans:*** Continue to evaluate the effectiveness of various cell-based approaches to facilitate blister agent wound healing in skin and eye. Begin advanced studies focused on down-selecting wound healing products found to be most effective for transition. Continue to assess in animals whether bioengineering and molecular biology approaches may be used to treat blister agent skin and eye injury. Initiate the development of an approach to decontaminate CWAs in penetrating wounds. ***FY 2012 Plans:***	4.900	3.689	3.745

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Determine the most effective cell-based approaches to facilitate healing of skin and eye wounds due to sulfur mustard exposure. Complete evaluation of potential wound healing products for advanced development. Evaluate candidate approaches to decontaminate penetrating wounds that have been exposed to CWAs. Further assess molecular biology approaches in animal models to treat skin and eye injuries as a result of sulfur mustard exposure.			
Title: 6) Therapeutics ***Description:*** 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. ***FY 2010 Accomplishments:*** Tested broad-spectrum reactivators in one or more animal models, with a focus on requirements to support FDA submissions under the animal rule. Initiated safety/side effect/dosing and the body's effects on the drug evaluation of new compounds. Continued to evaluate novel and FDA-approved anticonvulsants, neuroprotectants, anti-epileptics, and receptor competitors and neutralizing agents for neuroprotective activity against nerve agents in animal models. ***FY 2011 Plans:*** Continue to evaluate, in animals, novel compounds and FDA-approved drugs not yet evaluated for efficacy against nerve agents. These potential compounds include anticholinergics, neuroprotectants, anticonvulsants, and improved reactivators. Continue efficacy testing on candidates that are designed to support eventual FDA licensure. Continue development of animals models related to nerve exposure with emphasis on FDA animal rule approval. ***FY 2012 Plans:*** Continue animal model evaluation of novel and/or FDA approved drugs not yet tested for treatment of nerve agent exposure. Transition Centrally Active Nerve Agent Therapeutic (scopolamine). Continue development of animal models related to nerve agent exposure. Maintain core capabilities for standardization of in vitro and in vivo testing of therapeutic candidates.	12.676	13.137	4.170
Title: 7) Therapeutics ***Description:*** Respiratory and Systemic: Supports investigation of the systemic host response to chemical warfare agent (CWA) injury via all routes of exposure, with emphasis on the respiratory system and chronic effects of exposure. Develops effective practical field and clinic management strategies, and physical and pharmacological interventions to treat the injury processes. 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.	3.500	1.367	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Identified and tested potential therapeutics with a focus on FDA approved drugs that are currently used for other indications for treatment of CWA-induced lung damage. Investigated approaches to enhance inhalational delivery of selected candidate therapeutics. Evaluated commercially available aerosol bronchodilators as supportive therapy following acute inhalational exposure to CWAs. ***FY 2011 Plans:*** Continue to evaluate previously identified lead candidate countermeasures for future transition to advanced development. Investigate novel delivery systems for potential inhalational therapeutics against CWA. Continue to investigate efficacy of commercially available aerosol bronchodilators as supportive therapy following pulmonary exposure to CWAs. Research funding has been terminated for future years.			
Title: 8) Therapeutics ***Description:*** Non Traditional Agents (NTAs): Determines the toxic effects of agents by probable routes of field exposure and refines standard experimental routes. Physiological parameters and pathological assessment will be used to establish the general mode and mechanisms of toxicity. ***FY 2010 Accomplishments:*** Developed and evaluated novel and Food and Drug Administration licensed products as post-exposure therapeutics against NTA poisoning in advanced animal models. ***FY 2011 Plans:*** Complete characterization of a novel therapeutic for manufacturability and pharmacology. Establish formulation for safety testing and stability. All NTA-related efforts have been re-aligned to Chemical Therapeutics NTA within this Project in FY12.	0.709	2.454	-
Title: 9) Chem Therapeutics NTA ***Description:*** 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. ***FY 2012 Plans:***	-	-	9.941

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete characterization of a novel therapeutic for manufacturability and pharmacology. Establish formulation for safety testing and stability. This work represents a continuation of efforts that were initiated in previous years under the TC3 Chemical Therapeutics capability area prior to the Chemical Therapeutics NTA capability area being established in FY12.			
Accomplishments/Planned Programs Subtotals	28.046	29.134	21.582

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MC4: *MEDICAL CHEMICAL DEFENSE (ACD&P)*	20.518	0.000	20.804		20.804	3.658	5.045	14.716	3.555	Continuing	Continuing
• MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*	4.126	51.856	26.407		26.407	18.860	18.396	20.824	27.289	Continuing	Continuing
• TC2: *MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)*	38.644	33.648	36.546		36.546	36.993	37.789	38.163	39.395	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TE3: *TEST & EVALUATION (ATD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TE3: *TEST & EVALUATION (ATD)*	12.296	11.875	11.199	-	11.199	11.081	0.992	0.991	0.990	Continuing	Continuing

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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Test and Evaluation (T&E) ***Description:*** Test and Evaluation, Detection: Develop, test, and evaluate technologies and processes in support of detection capability testing. ***FY 2010 Accomplishments:*** Continued development of methodologies and capabilities for test and evaluation of technologies currently in early stages of tech-base development. Continued NTA chamber design effort by conducting dry dissemination development and proof of principle tests with several agents and address the questions regarding the safety of unprotected personnel using the chamber post decontamination. ***FY 2011 Plans:*** Complete development of methodologies and capabilities for test and evaluation of technologies currently in early stages of technology development.	5.610	2.784	-
Title: 2) Test and Evaluation (T&E) NTA ***Description:*** Develops test and evaluation technologies and processes in support of NTA activities. ***FY 2011 Plans:*** Conduct facility design efforts by conducting large particle dissemination development and proof of principle tests with several agents. Complete testing regarding the safety of unprotected personnel using the chamber after decontamination. ***FY 2012 Plans:***	-	2.000	6.460

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete facility design efforts by conducting large particle dissemination development and proof of principle tests with several agents. Initiate select agent testing.			
Title: 3) Test and Evaluation (T&E) ***Description:*** Test and Evaluation, Threat Agent Science: Develop test and evaluation technologies and processes in support of Threat Agent Science activities, with a particular emphasis on Non-Traditional Agents. ***FY 2010 Accomplishments:*** Continued development of NTA Simulants. Provided a data base to define the specific characteristic(s) of CWA and BWA threats that must be simulated in order to test the range of types of CBD systems and technologies. Identified and developed simulant or suite of simulants to be used to facilitate field tests of multiple CWA and BWA detectors and/or a multi-purpose BWA/CWA detector. Developed the relationship between aerosolized biological simulants and aerosolized live biological agents for bio standoff detection and discrimination, including identifying the impact of interferents and varying environmental conditions on this relationship. ***FY 2011 Plans:*** Develop methodology and establish the relationship of simulants used in field trials to agents for each CWA detection technology; includes determination of quantity of simulants required to mimic the detector response to agent as well as how interferents and environmental factors impact both simulant and agent. Identify and develop simulants that enable decontamination processes to be monitored to determine its/their progression and efficiency. Develop methodologies that disperse or deposit currently available simulants as if they were agents, which could include adding thickeners or surfactants.	1.457	1.391	-
Title: 4) Test and Evaluation (T&E) ***Description:*** Test and Evaluation, Information System Technology: Develop test and evaluation technologies and processes in support of Information System Technology activities. ***FY 2010 Accomplishments:*** Developed second module of decontamination model. Continued development and integration relevant to construction of systems performance models for collective protection, contamination avoidance, and individual protection. Built requirements for systems performance model integration and program-wide exploitation. Conducted requirements analysis for inclusion of data from test and evaluation community into CBRN Data Backbone. ***FY 2011 Plans:*** Conclude development and integration relevant to construction of collective protection, individual protection, and decontamination models for test and evaluation and transition those models. Continue to build requirements for system performance model	5.142	5.600	4.739

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
integration and program-wide exploitation. Collect and federate test data into CBRN Data Backbone prototype. Create processes for entry and authorization of test data in CBRN Data Backbone. Initiate individual protection equipment (IPE) model development to predict system exposure relative to toxicological exposure. ***FY 2012 Plans:*** Further develop CBRN data management capabilities for test and evaluation, with emphasis on enabling access to information for analysis within CBDP systems performance models. Begin Phase 1 of a multi-year effort to create a comprehensive simulation tool for test and evaluation of CBRN defense systems. Further enhance ability to evaluate decontaminants and decontamination systems by continuing to develop simulation capabilities for decontamination processes.			
Title: 5) Test and Evaluation (T&E) ***Description:*** Test and Evaluation, Protection and Hazard Mitigation: Develop test and evaluation technologies and processes in support of Protect and Hazard Mitigation activities. ***FY 2010 Accomplishments:*** Initiated methodology/source data effort to simulate IP durability test in laboratory and relationship to field durability. ***FY 2011 Plans:*** Continue development of methodology/source data effort to simulate IP durability in laboratory and relationship to field durability.	0.087	0.100	-
Accomplishments/Planned Programs Subtotals	12.296	11.875	11.199

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TE4: *TEST & EVALUATION (ACD&P)*	28.412	19.304	5.438		5.438	16.232	12.461	18.369	19.296	Continuing	Continuing
• TE5: *TEST & EVALUATION (SDD)*	39.372	15.901	11.043		11.043	5.748	11.866	12.217	15.562	Continuing	Continuing
• TE7: *TEST & EVALUATION (OP SYS DEV)*	4.805	4.813	3.597		3.597	3.348	2.888	2.855	2.004	Continuing	Continuing

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TE3: *TEST & EVALUATION (ATD)*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*	4.086	0.957	-	-	-	0.200	0.200	0.434	0.484	Continuing	Continuing

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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Radiological Medical Countermeasures	4.086	0.957	-
Description: 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. ***FY 2010 Accomplishments:*** Evaluated mature and promising agents for respiratory and gastrointestinal damage and repair. Demonstrate efficacy and safety in non-human primates. Began down-selection and prepared for transition of one mature radioprotectant to the advanced developer, using pertinent science and technology data to support an Investigational New Drug (IND) application for eventual Food and Drug Administration (FDA) license. ***FY 2011 Plans:*** Continue to investigate relatively mature candidates for advanced development as medical countermeasures to prevent and treat exposure to radiation. Continue to evaluate diagnostic biodosimetry biomarkers that could be used to potentially screen mass casualties. Continue to explore the development of a biodosimetry hand-held diagnostic device that is minimally invasive, accurate, rapid, high-throughput, and suitable for medical triage. Continue development of animal models for radiation exposures useful to support FDA licensure.			
Accomplishments/Planned Programs Subtotals	4.086	0.957	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TR3: *MEDICAL RADIOLOGICAL DEFENSE (ATD)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*	2.800	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	2.800
• MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*	0.000	1.143	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1.143
• TR2: *MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)*	1.818	2.884	0.806		0.806	0.605	0.603	0.379	0.335	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT TT3: *TECHBASE TECHNOLOGY TRANSITION*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TT3: *TECHBASE TECHNOLOGY TRANSITION*	7.381	4.504	-	-	-	-	-	-	-	0.000	11.885

A. Mission Description and Budget Item Justification

This project (TT3) supports technology transition, technology experimentation and demonstration efforts, and technology readiness assessments in support of unique chemical and biological Advanced Technology Demonstrations (ATDs) and Joint Capability Technology Demonstrations (JCTDs). Within this project are two primary capability areas: 1) Experiment and Technology Demonstrations; and 2) Technology Readiness Assessment. The Experiment and Technology Demonstrations capability area focuses on integration, testing, and assessing candidate ATDs and JCTDs and includes three thrust areas (two of which are new sub-thrust areas that consolidate legacy systems and are annotated as such below): Advanced Remediation Technologies (ART), Early Warning Military Application in Reconnaissance Systems (EW-MARS), and Comprehensive Innovative Protection (CIP). The ART 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 EW-MARS achieves 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. The CIP transitions mature technologies to improve individual and collective protection capabilities. The Technology Readiness Assessment capability area focuses on completing manufacturing readiness assessments, technology readiness evaluations, and assessing maturity levels before transitioning ATDs and JCTDs to advanced development efforts located in Budget Activity 4 (Project TT4).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) Experiment & Technology Demonstrations	4.884	2.175	-
FY 2010 Accomplishments: EW Thrust Area Conducted technology testing for EW/MARS Rapid Area Sensitive Site Reconnaissance (RASR) ATD. RASR assessed the capability to rapidly survey large areas (whole rooms, courtyards, fields) and assess and identify contamination with Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs) or Non-Traditional Agents (NTAs). Conducted a technical assessment to determine if a designated WMD payload was or was not onboard a missile delivery system for the EW/MARS Post Intercept WMD Identification (PIWID) ATD. CIP Thrust Area Analyzed the thermal burden for Warfighter protective gear in a CBRN environment as part of the CIP Low Burden Individual Protection Demonstration (IP Demo). Completed assessment of integrated fabric, low resistance/profile filtration, human performance prediction and assessment and low-burden air purifying respirator concurrent with the Protection and Hazard			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Mitigation capability area (see BA2, Project CB2, Protection and Hazard Mitigation), which will support the Uniform Integrated Protective Ensemble (UIPE), and incorporate lessons into further development of integrated fabric. ***FY 2011 Plans:*** ART Thrust Area Perform technical assessments for the ART Hazard Mitigation, Material, and Equipment Restoration (HaMMER) ATD. Incorporate results into HaMMER from testing and transition of solid oxidant and green surfactant and the Decontamination of Family Systems from the Protection and Hazard Mitigation capability area (see BA2, Project CB2, Protection and Hazard Mitigation). EW Thrust Area. Conduct Surety testing, technical demonstrations, and down selects for the RASR ATD. CIP Thrust Area Develop lessons learned from the IP Demo and inform the Protection and Hazard Mitigation capability area for future development (see BA2, Project CB2, Protection and Hazard Mitigation).			
Title: 2) Technology Readiness Assessment ***FY 2010 Accomplishments:*** Continued Technology Readiness Evaluations in support of the EW MARS-JFP ATD. For the EW RASR ATD, assessed the capability to rapidly survey large areas (whole rooms, courtyards, fields) and assess and identify contamination with Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs) or Non-Traditional Agents (NTAs). Built and integrated key technology components integrated to demonstrate system level Force Protection capabilities in a Forward Operating Base scenario. Investigated the efficacy of rapid biological threat detection coupled with automatic, rapid delivery of supplies, therapeutics, and physiological monitoring equipment via unmanned systems for the CIP JMDSE ATD. ***FY 2011 Plans:*** Continue Technology Readiness Evaluations in support of the EW MARS-JFP ATD. Initiate Technology Readiness Evaluation for the CIP thrust area in preparation for a new ATD. Assess emerging innovations associated with orchestrating the response and capabilities of both individual and collective protection measures within the framework of smart networks and smart materials.	2.497	2.329	-
Accomplishments/Planned Programs Subtotals	7.381	4.504	-

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CB2: *CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)*	110.937	88.897	97.774		97.774	94.721	89.677	90.823	108.941	Continuing	Continuing
• TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*	24.937	26.466	3.022		3.022	3.923	4.758	8.467	9.075	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program										DATE: February 2011	
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)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	248.298	277.062	261.143	-	261.143	251.988	224.137	226.719	196.651	Continuing	Continuing
CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	39.396	63.347	33.952	-	33.952	28.703	24.178	37.476	27.930	0.000	254.982
CM4: *HOMELAND DEFENSE (ACD&P)*	5.666	9.526	14.117	-	14.117	2.966	-	-	-	0.000	32.275
DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	14.867	7.051	38.737	-	38.737	30.608	6.430	7.383	12.553	Continuing	Continuing
IP4: *INDIVIDUAL PROTECTION (ACD&P)*	2.305	3.172	-	-	-	1.088	3.661	6.719	4.616	Continuing	Continuing
IS4: *INFORMATION SYSTEMS (ACD&P)*	13.914	11.221	7.420	-	7.420	14.682	-	-	-	0.000	47.237
MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	95.483	136.975	137.653	-	137.653	150.128	167.604	133.589	119.626	Continuing	Continuing
MC4: *MEDICAL CHEMICAL DEFENSE (ACD&P)*	20.518	-	20.804	-	20.804	3.658	5.045	14.716	3.555	Continuing	Continuing
MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*	2.800	-	-	-	-	-	-	-	-	0.000	2.800
TE4: *TEST & EVALUATION (ACD&P)*	28.412	19.304	5.438	-	5.438	16.232	12.461	18.369	19.296	Continuing	Continuing
TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*	24.937	26.466	3.022	-	3.022	3.923	4.758	8.467	9.075	Continuing	Continuing

A. Mission Description and Budget Item Justification

Operational forces have an immediate need to survive, safely operate, and sustain operations in a Chemical and Biological (CB) agent threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high risk missions. This program element supports the Advanced Component Development and Prototypes (ACD&P) of CB defensive equipment, both medical and non-medical. 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 have been structured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, force protection (individual and collective), decontamination, and medical countermeasures. ACD&P is conducted for an array of chemical/biological/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 material

without damaging combat equipment, personnel or the environment. In the medical chemical/biological defense area, ACD&P is conducted for improved medical equipment, vaccines, and drugs essential to counteracting lethal and human performance degrading effects of chemical and biological agent threats. Specific items include improvements to nerve agent antidotes, anticonvulsants, biological agent diagnostics, and vaccines to protect against various Biological Warfare (BW) agents. Transformational Medical Technology Initiatives (TMTI) efforts in this area will include the continual build out of both a genomic sequencing and a bio-chemical informatics capability for the DoD. ACD&P also supports the Product Director Test Equipment, Strategy and Support (PD TESS) providing for 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. This project also funds development of candidate therapeutic medical countermeasures to mitigate the consequences of exposure to ionizing radiation due to nuclear or radiological attacks.

BA4 reductions in support of the DoD Efficiency Initiatives for FY12 include: The Next Generation Chemical Standoff Detector (NGCSD) program, which was deferred as Service requirements/concepts for operation could not be met (-$13.003M); PD TESS efforts reduced in association with program changes (-$1.322M); CBRN MSSKO program delayed by one year as requirements continue to be developed and refined (-1.210M); Program management support reduced (-$2.568M); Service Support Contracts reduced (-$1.007M).

This Program Element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include ACD&P in the areas of Non-Traditional Agents (NTA) and chemical/biological defense equipment and is correctly placed in BA4.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	209.275	277.062	182.351	-	182.351
Current President's Budget	248.298	277.062	261.143	-	261.143
Total Adjustments	39.023	-	78.792	-	78.792
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.148	-			
• SBIR/STTR Transfer	-2.558	-			
• Other Adjustments	43.729	-	78.792	-	78.792

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*		
Congressional Add: *1) Broad Spectrum Therapeutic Countermeasure*	1.593	-
Congressional Add Subtotals for Project: MB4	1.593	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Congressional Add Totals for all Projects	1.593	-

Change Summary Explanation

Funding: FY10 - Realignment between BA4 and BA5 for approved threshold reprogramming to meet FAR guidelines (+$2,000K CA4; +$5,666K CM4; +$12,455K DE4; +$2,305K IP4; +$14,715K IS4; +6,898K MC4); Other program realignments to support CBDP and DoD program initiatives (-$2,297K CA4; +$620K DE4; -$800K IS4; -$5,690K MB4; +$4,300K MC4; +$2,800K MR4; -$1,390K TT4); SBIR Transfer (-$493K CA4; -$1264K MB4; -$118K MC4; -$361K TE4; -$322K TT4).

FY12 - Program realignments to support high priority CBDP and DoD program initiatives (+$25,009K CA4; +$14,139K CO4; +$33,068K DE4; +$4,083K IS4; +$7,787K MB4; +$18,059K MC4; -$6,404K TE4; -$15,538K TT4); Economic assumptions (-$52K CA4; -$22K CM4; -$59K DE4; -$11K IS4; -$214 MB4; -$33K MC4; -$9K TE4; -$4K TT4); Reductions to Service Support Contracts in support of the DoD Efficiency Initiatives (-$98K CA4; -$20K DE4; -$56K IS4; -$638K MB4; -$195K MC4)..

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	39.396	63.347	33.952	-	33.952	28.703	24.178	37.476	27.930	0.000	254.982
Quantity of RDT&E Articles	0	22	0		0	0	0	0	0		

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) Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS), formerly JNBCRS Increment 2; (2) Joint Biological Standoff Detector System (JBSDS); (3) Joint Biological Tactical Detection System (JBTDS); (4) Joint Chemical Agent Detector (JCAD); (5) Major Defense Acquisition Program (MDAP) Support; (6) Next Generation Chemical Standoff Detection (NGCSD); and (7) Non Traditional Agent Detection (NTA Detection).

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 "JNBCRS Increment 2" was renamed to "CBRN DRS" starting in FY10.

The Joint Biological Standoff Detector System (JBSDS) is employing an incremental acquisition strategy. JBSDS Increment 1 was the first standoff early warning biological detection (BD) system for the Joint Services. The system demonstrated the capability to provide near real time detection of biological attacks/incidents and standoff early detection/warning (Detect to Warn) of biological Warfare (BW) agents at fixed sites or in static mode on vehicles. It demonstrated the capability of providing standoff detection, ranging, tracking, discrimination (bio vs. non-bio), of BW aerosol clouds for advanced warning, reporting, and protection. The JBSDS will augment and integrate with existing BD systems to provide a BD network capable of near real time detection and warning theater-wide to limit the effects of biological agent hazards against U.S. forces at the tactical and operational levels of war. The JBSDS can be employed in support of various areas (e.g., fixed sites, Air Ports of Debarkation/Sea Ports of Debarkation (APODs/SPODs), amphibious landing sites, etc.), or on platforms (ships, aircraft or ground vehicles). The Increment 1 systems will be used for training to support Increment 2 concept of operations development.

The JBSDS Increment 2 builds on the capabilities demonstrated during the development of JBSDS Increment 1. The JBSDS Increment 2 system will focus on providing 24-hour operations, improving the false alarm rate and detection sensitivity, while decreasing size, weight and power. The JBSDS Increment 2 will also integrate with the global information network to provide near real time detection and warning theater-wide to limit the effect of biological agent hazards against U.S. forces at the tactical and operational levels of war. During the Technology Development phase, JBSDS will hold competitive prototyping and key sub-system development, conduct test and evaluation of prototypes, improve agent-simulant modeling, prepare Milestone B documentation and preliminary designs.

The Joint Biological Tactical Detection System (JBTDS) 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. JBTDS will provide warning through the Joint Warning And Reporting Network (JWARN) and

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archive sample for follow-on analyses. JBTDS will provide near real time local audio and visual alarm for use by any Military Occupational Specialty (MOS). JBTDS components will be man portable, battery operable and easy to employ. JBTDS will be used organically at battalion level and below and provide notification of a 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.

The Joint Chemical Agent Detector (JCAD) efforts will evaluate current technologies focusing on capability gaps for emerging threats not addressed by M4 and M4E1 JCAD.

The Major Defense Acquisition Program (MDAP) Support program will integrate System of Systems (SoS) solutions across the Armed Services for MDAPs having Chemical and Biological Radiological and Nuclear (CBRN) survivability requirements. The program will demonstrate modular, net-centric, "plug and play" capabilities for mounted and dismounted CBRN reconnaissance that will establish a common CBRN reconnaissance architecture across the services.

The Next Generation Chemical Standoff Detection (NGCSD), a next generation chemical standoff effort that was initiated under the JSLSCAD program, will provide early warning for both traditional and non-traditional chemical agent attacks at fixed sites, forward operating bases and on Service designated vehicles and ships. This effort will develop and integrate new standoff sensor technologies for future standoff systems. The detection system will interface with the Services and Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) architectures.

The Non Traditional Agent Detection (NTA Detection) projects will conduct system assessment methodology development, environmental monitor technology research and prototype development. These tasks are in the interest of advancing potential technologies towards fielding solutions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) CBRN DRS	0.500	1.986	-
FY 2010 Accomplishments: Initiated and completed Analysis of Materiel Solutions (AMS) for CBRN DRS program to support CDD development.			
FY 2011 Plans: Initiate and complete personal protective equipment (PPE) testing.			
Title: 2) JBSDS Increment 2	3.500	3.850	3.928
FY 2010 Accomplishments: Provided strategic, tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight, technical support and milestone documentation.			
FY 2011 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Provide strategic, tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight, technical support and milestone documentation. ***FY 2012 Plans:*** Continue strategic, tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight, technical support and milestone documentation.			
Title: 3) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Initiated agent performance assessment, cross section measurements and simulant variability testing. ***FY 2011 Plans:*** Continue agent performance assessment, cross section measurements, simulant variability testing and relative humidity testing. ***FY 2012 Plans:*** Continue agent performance assessment, cross section measurements and agent variability testing.	2.831	2.875	3.300
Title: 4) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Initiated Increment 2 Modeling and Simulation efforts supporting agent performance assessment and standardization of cloud modeling software. Initiate cloud modeling testing to support agent performance assessment and contractor algorithms. ***FY 2011 Plans:*** Continue Increment 2 Modeling and Simulation efforts supporting agent performance assessment and standardization of cloud modeling software. Continue cloud modeling testing and incorporate modeling and simulation capabilities with system algorithms. ***FY 2012 Plans:*** Continue Increment 2 Modeling and Simulation efforts supporting agent performance assessment and standardization of cloud modeling software. Mature system algorithms with continued testing and modeling and simulation results.	1.138	1.000	0.749
Title: 5) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Initiated Increment 2 candidate technology analysis, alternate system analysis and modeling and simulation in support of agent performance assessment for future competitive prototypes. ***FY 2011 Plans:***	1.500	1.250	1.263

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue Increment 2 candidate technology analysis, alternate system analysis and modeling and simulation in support of agent performance assessment of developmental prototypes. ***FY 2012 Plans:*** Continue Increment 2 candidate technology analysis, alternate system analysis and modeling and simulation in support of agent performance assessment of developmental prototypes.			
Title: 6) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Initiated and completed Family of Systems demonstration and simulation.	0.370	-	-
Title: 7) JBSDS Increment 2 ***FY 2011 Plans:*** Initiate technology development and preliminary designs including competitive prototyping (estimated at $2M per prototype for up to 3 each plus hardware development, software development and testing) to multiple competitive contracts. ***FY 2012 Plans:*** Continue technology development and preliminary designs including competitive prototyping (estimated at $2M per prototype for up to 3 each plus hardware development, software development and testing) to multiple competitive contracts.	-	12.000	11.976
Title: 8) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Provided developmental test organizations funding to support test planning, test support for evaluation of the competitive prototypes and model validation efforts (simulant variability testing and aerosol modeling testing). ***FY 2011 Plans:*** Continue developmental test organizations funding to support test planning, test support for evaluation of the competitive prototypes and model validation efforts (continued simulant variability testing, aerosol modeling testing and initiate relative humidity testing). ***FY 2012 Plans:*** Continue developmental test organizations funding to support test planning, test support for evaluation of the competitive prototypes and model validation efforts (initiate agent variability testing, continue relative humidity testing and initiate competitive prototype testing).	2.389	3.426	2.991
Title: 9) JBSDS Increment 2	0.870	0.750	1.273

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Initiated alternate systems reports, competitive prototype analysis and acquisition documentation in support of technology development phase. ***FY 2011 Plans:*** Continue competitive prototype analysis and acquisition documentation support of technology development phase. ***FY 2012 Plans:*** Continue competitive prototype analysis and acquisition documentation support of technology development phase.			
Title: 10) JBSDS Increment 2 ***FY 2010 Accomplishments:*** Initiated validation of simulants, models and test support equipment including referee equipment development for the evaluation of competitive prototypes and advanced development hardware. ***FY 2011 Plans:*** Continue validation of simulants, models and test support equipment including referee equipment development for the evaluation of competitive prototypes and advanced development hardware. ***FY 2012 Plans:*** Continue validation of simulants, models and test support equipment including referee equipment development for the evaluation of competitive prototypes and advanced development hardware.	4.085	3.000	2.995
Title: 11) JBTDS ***FY 2012 Plans:*** Initiate activities to develop Engineering and Manufacturing Development (EMD) contract solicitation.	-	-	0.826
Title: 12) JBTDS ***FY 2012 Plans:*** Initiate activities to support Milestone B document development.	-	-	1.000
Title: 13) JBTDS ***FY 2011 Plans:*** Initiate up to three (3) competitive prototyping contracts effort for JBTDS Increment 1.	-	6.500	-
Title: 14) JBTDS ***FY 2011 Plans:***	-	4.500	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate Competitive Prototyping test efforts.			
Title: 15) JBTDS ***FY 2011 Plans:*** Initiate technology readiness assessment of prototypes.	-	0.250	-
Title: 16) JBTDS ***FY 2011 Plans:*** Initiate independent assessment of Competitive Prototyping data and test reports. ***FY 2012 Plans:*** Continue independent assessment of Competitive Prototyping data and test reports.	-	0.400	0.250
Title: 17) JBTDS ***FY 2010 Accomplishments:*** Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:*** Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2012 Plans:*** Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	3.991	3.613	2.743
Title: 18) JBTDS ***FY 2010 Accomplishments:*** Provided user representation and involvement (i.e., Integrated Product Teams and working groups). ***FY 2011 Plans:*** Continue user representation and involvement (i.e., Integrated Product Teams and working groups). ***FY 2012 Plans:*** Continue user representation and involvement (i.e., Integrated Product Teams and working groups).	0.981	0.869	0.658
Title: 19) JBTDS	1.341	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Conducted Technology Readiness Evaluation on JBTDS collector and identifier candidates.			
Title: 20) JBTDS ***FY 2010 Accomplishments:*** Initiated test and evaluation methodologies.	0.800	-	-
Title: 21) JBTDS ***FY 2010 Accomplishments:*** Conducted agent to simulant correlation demonstrations.	1.325	-	-
Title: 22) JBTDS ***FY 2010 Accomplishments:*** Conducted risk reduction analysis and studies.	0.477	-	-
Title: 23) JBTDS ***FY 2010 Accomplishments:*** Conducted Analysis of Material Alternatives (AoMA).	0.345	-	-
Title: 24) JBTDS ***FY 2010 Accomplishments:*** Developed Pre Milestone A documentation.	0.804	-	-
Title: 25) JCAD ***FY 2011 Plans:*** Evaluate technology readiness of prototype systems for future increments in advanced chemical point detection.	-	1.350	-
Title: 26) JCAD ***FY 2011 Plans:*** Provide Program Management and Systems Engineering Support.	-	0.636	-
Title: 27) MDAP SPRT ***Description:*** Catalytic Oxidation (CatOx) Technology Demonstration of improved air purification for the Abrams Main Battle Tank (MBT).	0.670	0.900	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** CA4: *CONTAMINATION AVOIDANCE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Focused on monitoring contractor conceptual design activities. Conducted engineering design options review and design downselect. Conducted contractor familiarization testing of the Abrams MBT. ***FY 2011 Plans:*** Complete the development and fabrication of three prototype CatOx systems at approximately $155 thousand each.			
Title: 28) MDAP SPRT ***Description:*** Chemical, Biological, and Radiological (CBR) Capabilities Analysis. ***FY 2010 Accomplishments:*** Completed CBR Capabilities Analysis for Ground Combat Vehicle (GCV), Joint Strike Fighter, Small Unmanned Ground Vehicle (SUGV), and Multifunction Utility/Logistics Equipment (MULE) Vehicle. ***FY 2011 Plans:*** Conduct CBR Capabilities Analysis for Missile Defense Agency, DDG-51 FLT III, RQ-7C Shadow Unmanned Aerial Vehicle, Joint Light Tactical Vehicle (JLTV), and US Strategic Command (USSTRATCOM).	0.696	0.400	-
Title: 29) MDAP SPRT ***Description:*** Chemical, Biological, and Radiological (CBR) Material Solutions Analysis. ***FY 2010 Accomplishments:*** Initiated the CBR Material Solutions Analysis for Ground Combat Vehicle. ***FY 2011 Plans:*** Conduct CBR Material Solutions Analyses for Missile Defense Agency, RQ-7C Shadow Unmanned Aerial Vehicle, and Joint Light Tactical Vehicle. Complete CBR Material Solutions Analyses for Ground Combat Vehicle. Conduct individual protection equipment compatibility study for Ship to Shore Connector.	0.150	1.331	-
Title: 30) MDAP SPRT ***Description:*** Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:***	-	0.346	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Conduct strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.			
Title: 31) NGCSD ***FY 2010 Accomplishments:*** Initiated design and development of algorithm and sensor prototype. ***FY 2011 Plans:*** Complete phase of sensor prototype development.	4.467	3.641	-
Title: 32) NGCSD ***FY 2010 Accomplishments:*** Planned and prepared Technology Evaluation (TE). ***FY 2011 Plans:*** Complete Technology Evaluation.	0.462	2.159	-
Title: 33) NGCSD ***FY 2010 Accomplishments:*** Initiated the strategic/tactical planning, systems engineering, program/financial management, and Integrated Product Team (IPT) support. ***FY 2011 Plans:*** Continue the strategic/tactical planning, systems engineering, program/financial management, and IPT support.	3.104	2.100	-
Title: 34) NGCSD ***FY 2011 Plans:*** Fabricate prototype for TE and prototype development support (3 each of 3 technologies at a cost of $300K each).	-	3.600	-
Title: 35) NGCSD ***FY 2011 Plans:*** Provides for program management support.	-	0.615	-
Title: 36) NTA DETECT ***FY 2010 Accomplishments:***	0.794	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Conducted environmental monitor development.			
Title: 37) NTA DETECT ***FY 2010 Accomplishments:*** Conducted design and development of prototype.	0.606	-	-
Title: 38) NTA DETECT ***FY 2010 Accomplishments:*** Initiated and completed system assessment methodology development.	1.200	-	-
Accomplishments/Planned Programs Subtotals	39.396	63.347	33.952

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CA5: *CONTAMINATION AVOIDANCE (SDD)*	67.384	124.936	52.114		52.114	63.524	82.148	104.170	95.822	Continuing	Continuing
• JC0100: *JOINT BIO POINT DETECTION SYSTEM (JBPDS)*	41.976	43.555	26.300		26.300	36.550	49.055	49.548	7.938	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	32.294	40.071	35.172		35.172	34.347	34.347	35.871	34.380	0.000	246.482
• JN0900: *NON TRADITIONAL AGENT DETECTION (NTAD)*	0.000	4.178	3.891		3.891	4.711	0.000	0.000	0.000	0.000	12.780
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	15.721	22.511	63.714		63.714	108.647	0.000	0.000	0.000	0.000	210.593
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	6.815	15.414	6.991		6.991	19.962	30.940	39.670	24.999	0.000	144.791

D. Acquisition Strategy

CBRN DRS

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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. Upon further review of the CBRN capabilities at the Materiel Development Decision (MDD), the program restructured in 4QFY10 to begin the acquisition process at Milestone (MS) B. Funding finalizes the Analysis of Materiel Solutions (AMS), materiel/prototype testing, and design to provide the Services with enhanced full spectrum CBRN detection capability to support strategic, operational, and tactical objectives at lower life cycle costs. CBRN DRS will enhance the Situational Awareness (SA) by providing a dismounted ability to detect chemical, biological and radiological hazards across the Range of Military Operations (ROMO) and employ contamination avoidance activities to prevent disruption to operations and organizations.

JBSDS

The Joint Bio Stand-off Detector System (JBSDS) is employing an incremental acquisition strategy. JBSDS Increment 1 was the first standoff early warning biological detection (BD) system for the Joint Services. The JBSDS Increment 2 system will focus on providing 24-hour operations (Increment 1 is night-time only), improving the false alarm rate and detection sensitivity, while decreasing size, weight and power. The JBSDS Increment 2 will also integrate with the global information network to provide near real time detection and warning theater-wide to limit the effect of biological agent hazards against U.S. forces at the tactical and operational levels of war.

JBTDS

The Joint Biological Tactical Detection System (JBTDS) will be developed using an evolutionary acquisition strategy. The evolutionary approach is the preferred Department of Defense (DoD) strategy for rapid acquisition of mature technology for the warfighter. Under this approach, capability is developed in increments, recognizing up front the need for future capability improvements. Each increment is a militarily useful and supportable operational capability that can be developed, produced, deployed, and sustained. In addition, JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology and an evolutionary acquisition strategy is also consistent with the use of COTS and GOTS components. This is because as new and better technologies become available, they can be inserted faster into systems to meet the need for capability improvements.

This approach also provides capability to the warfighter in the shortest possible time. The JBTDS program will incrementally design, develop, integrate, test, procure and field systems that improve biological aerosol detection, sampling and identification capabilities and reduce size, weight, power consumption, and logistic footprint over current systems. Again, COTS and GOTS will be exploited to the fullest extent possible.

JCAD

The current strategy employs an improvement of the M4 JCAD to reduce Life Cycle costs, transition to a competitive procurement contract, and attain objective capability. Three competitive fixed-price contracts for the M4E1 were awarded in Sep 2007 for prototypes and options for full rate production. Competitive prototype testing was conducted and one system was selected for continued development. The production options will be exercised in FY11 following a successful production cut-in decision. The BA4 funding strategy will be to identify current technologies for addressing capability gaps for emerging threat not addressed by M4 and M4E1 JCAD.

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MDAP SPRT

The Major Defense Acquisition Program (MDAP) Support effort will integrate Chemical, Biological, and Radiological (CBR) solution sets across the Department of Defense for platforms, including MDAPs, having CBR defense and survivability requirements. The approach used for each platform will encompass: (1) Engaging the platform manager and establishing agreement upon the scope of effort, roles and responsibilities; (2) Performing requirements analysis and developing architectures to derive the system requirements from the capability document requirement, platform concept of operations, and appropriate threat documentation; (3) Identifying a solution set which leverages fielded items, programs of record and commercial items whenever feasible, minimizing developmental effort; (4) Verification and validation that the solution set meets the platform's requirements; (5) Providing subject matter expertise to support the integration and testing of the solution integrated onto the platform; and (6) Managing the integration of efforts across the CBR commodity areas to provide an integrated capability to the platform and identifying capability gaps through the applicable Joint Requirements Office led Integrated Concept Teams.

NGCSD

The Next Generation Chemical Standoff Detection (NGCSD) program, a next generation chemical standoff effort which was initiated under the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) program, will award Indefinite Delivery/Indefinite Quantity contract(s) to support system engineering, software development, test and evaluation, and system support efforts to increase standoff detection capabilities and identify new standoff technology. These critical contracts will allow the program office to complete current prototyping and test efforts to assess current technology and provide findings for use in the Sensor Suite Integration, the NTA Detect, Integrated Base Defense, and Bio-Surveillance programs.

NTA DETECT

The Non-Traditional Agent (NTA) 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. The products provide a near term capability to detect priority emerging threat materials with common core technologies to detect and identify threats that can further be explored for lab deployable, fixed site and handheld applications. Leveraging COTS/GOTS assessments will be used in order to lower program risks, reduce 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.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - SW SB - Analysis of Materiel Solutions	C/FP	AGENTASE-ICX:Pittsburgh, PA	0.500	0.986	Feb 2011	-		-		-	0.000	1.486	0.000
** JBSDS - HW SB - Technology Development and Preliminary Designs	C/FPIF	TBD:	-	12.000	May 2011	11.976	Feb 2012	-		11.976	0.000	23.976	0.000
** JBTDS - HW S - Competitive Prototype Contract	C/FFP	TBD:	-	6.500	May 2011	-		-		-	0.000	6.500	0.000
** JCAD - SW SB - Market Research and Readiness Evaluation	C/CPFF	Various:	-	0.850	Feb 2011	-		-		-	0.000	0.850	0.000
** MDAP SPRT - HW S - Catalytic Oxidation (CatOx) Technology Demonstration	C/CPFF	Honeywell Corporation:Phoenix, AZ	2.202	0.900	Feb 2011	-		-		-	0.000	3.102	0.000
** NGCSD - SW SB - Design and Development of Sensor Algorithm and Prototype	C/CPFF	JHU-APL (FY10)/ Various FY11:	1.580	3.641	May 2011	-		-		-	0.000	5.221	0.000
SW SB - Prototype Acquisition (3 each of 3 technologies)	C/CPFF	TBD:	-	3.600	Feb 2011	-		-		-	0.000	3.600	0.000
		Subtotal	4.282	28.477		11.976		-		11.976	0.000	44.735	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBSDS - ES S - INC 2 - Modeling & Simulation Test Support	C/CPFF	Bricks:Sigal & Miller Inc., Kennett Square	0.370	0.400	Feb 2011	0.524	Feb 2012	-		0.524	0.000	1.294	0.000
ES S - INC 2 - Modeling & Simulation Test Support	C/CPFF	NAVSEA:Johns Hopkins-Applied Physics Lab, Baltimore	0.785	1.000	Feb 2011	0.999	Feb 2012	-		0.999	0.000	2.784	0.000
ES S - INC 2 - Modeling & Simulation Test Support #2	MIPR	Sandia National Lab:Albuquerque, NM	3.085	2.400	Feb 2011	1.498	Feb 2012	-		1.498	0.000	6.983	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBTDS - ES S - User involvement	MIPR	Various:	0.981	0.869	Feb 2011	0.658	Feb 2012	-		0.658	0.000	2.508	0.000
ES S - Technology Readiness Assessment	PO	TBD:	-	0.250	May 2011	-		-		-	0.000	0.250	0.000
ES S - Lead evaluation for CP and data reports	MIPR	ATEC:	-	0.400	May 2011	0.250	Nov 2011	-		0.250	0.000	0.650	0.000
ES S - EMD contract preparation	MIPR	JPM BD:	-	-		0.826	Feb 2012	-		0.826	0.000	0.826	0.000
ES S - MS B document development	MIPR	JPM BD:	-	-		1.000	Feb 2012	-		1.000	0.000	1.000	0.000
** MDAP SPRT - ES S - CBR Capability Analysis	MIPR	Various:	1.396	0.400	Feb 2011	-		-		-	0.000	1.796	0.000
ES S - CBR Material Solutions Analysis	MIPR	Various:	1.943	1.331	Feb 2011	-		-		-	0.000	3.274	0.000
		Subtotal	8.560	7.050		5.755		-		5.755	0.000	21.365	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - DTE C - Personal Protective Equipment	MIPR	JPM Individual Protection:Stafford, VA	-	0.700	Feb 2011	-		-		-	0.000	0.700	0.000
** JBSDS - OTHT SB - INC 2 - Developmental Testing Support	MIPR	ECBC:MD, DPG	1.046	1.475	Feb 2011	1.797	Feb 2012	-		1.797	0.000	4.318	0.000
OTHT SB - Cloud modeling analysis	C/CPFF	ITT:Albuquerque, NM/ Battelle	1.138	1.000	Feb 2011	0.750	May 2012	-		0.750	0.000	2.888	0.000
OTHT SB - Agent performance analysis support	MIPR	ECBC:Aberdeen Proving Ground, MD	0.338	0.600	Feb 2011	0.800	Feb 2012	-		0.800	0.000	1.738	0.000
OTHT SB - Agent performance analysis	MIPR		1.500	1.250	Feb 2011	1.750	May 2012	-		1.750	0.000	4.500	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Johns Hopkins - Applied Physics Lab:Baltimore, MD											
OTHT SB - Algorithm Development	MIPR	TBD:	-	1.000	Feb 2011	1.000	May 2012	-		1.000	0.000	2.000	0.000
** JBTDS - DTE S - Competitive Prototyping Testing	MIPR	Dugway Proving Ground:UT, ECBC	-	4.500	Feb 2011	-		-		-	0.000	4.500	0.000
** JCAD - OTHT SB - Technology Evaluation of Prototype Systems	MIPR	Various:	-	0.500	May 2011	-		-		-	0.000	0.500	0.000
** NGCSD - OTHT SB - Conduct Technology Evaluation	MIPR	Various:	0.462	2.159	Feb 2011	-		-		-	0.000	2.621	0.000
		Subtotal	4.484	13.184		6.097		-		6.097	0.000	23.765	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - PM/MS SB - Program Management & Systems Engineering Support	MIPR	JPM NBC CA:APG, MD	-	0.300	Nov 2010	-		-		-	0.000	0.300	0.000
** JBSDS - PM/MS S - JPM BD & Management Support	MIPR	JPM BD:APG, MD	5.619	6.526	Feb 2011	6.882	May 2012	-		6.882	0.000	19.027	0.000
PM/MS S - PM/MS Other Government Agencies	MIPR	USN:USMC, USAF	0.432	0.500	Feb 2011	0.499	May 2012	-		0.499	0.000	1.431	0.000
** JBTDS - PM/MS S - JPM BD, APG, MD	MIPR	JPM BD:APG, MD	3.991	3.613	Nov 2010	2.743	Nov 2011	-		2.743	0.000	10.347	0.000
** JCAD - PM/MS SB - Program Management and Systems Engineering Support	MIPR	JPM NBC CA:APG, MD	-	0.636	Nov 2010	-		-		-	0.000	0.636	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** MDAP SPRT - PM/MS S - MDAP SPRT Management & Oversight	MIPR	Various:	-	0.346	Feb 2011	-		-		-	0.000	0.346	0.000
** NGCSD - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC CA:APG, MD	3.104	2.100	Feb 2011	-		-		-	0.000	5.204	0.000
PM/MS S - Program Management and Systems Engineering Support	MIPR	JPEO-CBD:Falls Church, VA	-	0.615	Aug 2011	-		-		-	0.000	0.615	0.000
		Subtotal	13.146	14.636		10.124		-		10.124	0.000	37.906	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	30.472	63.347		33.952		-		33.952	0.000	127.771	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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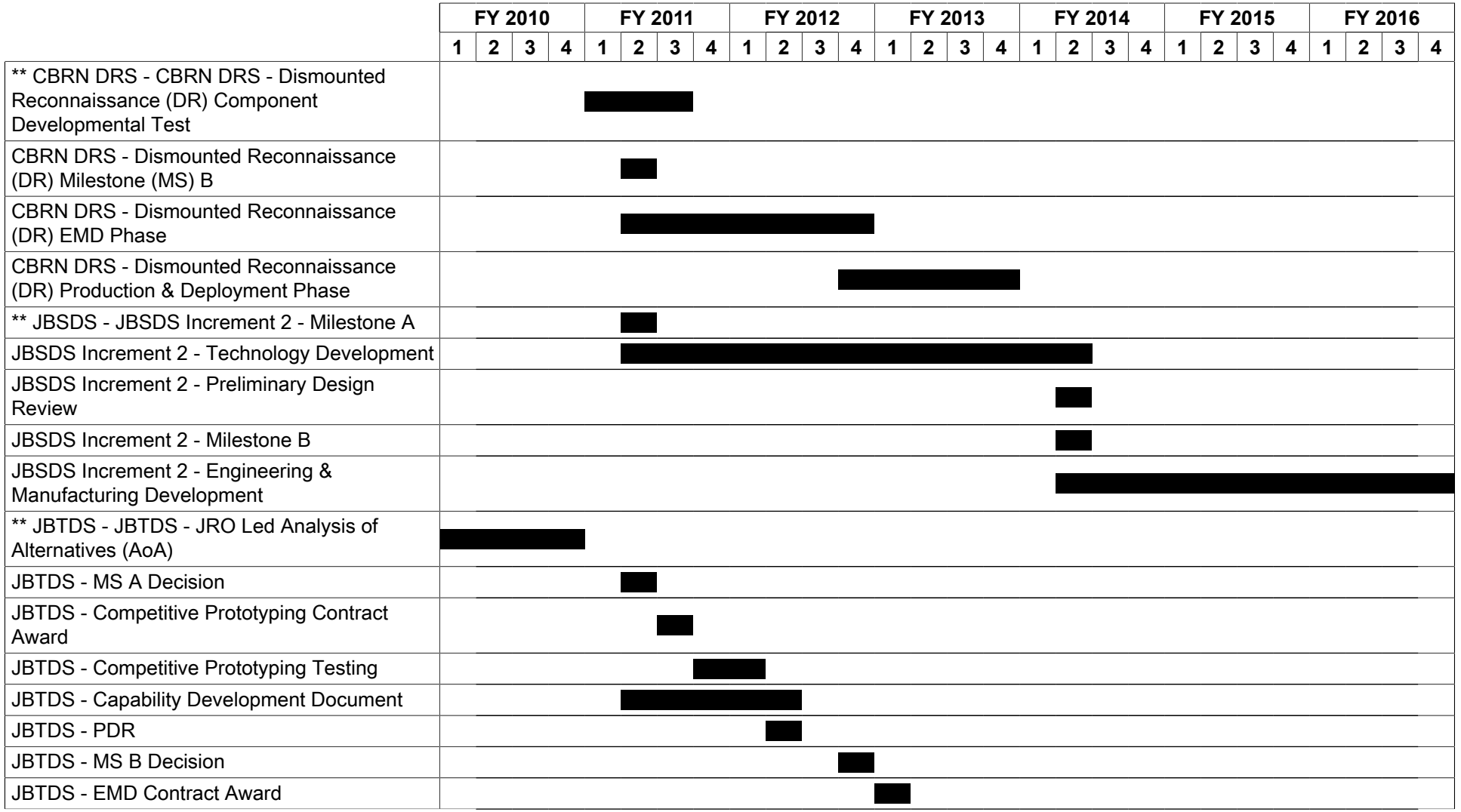

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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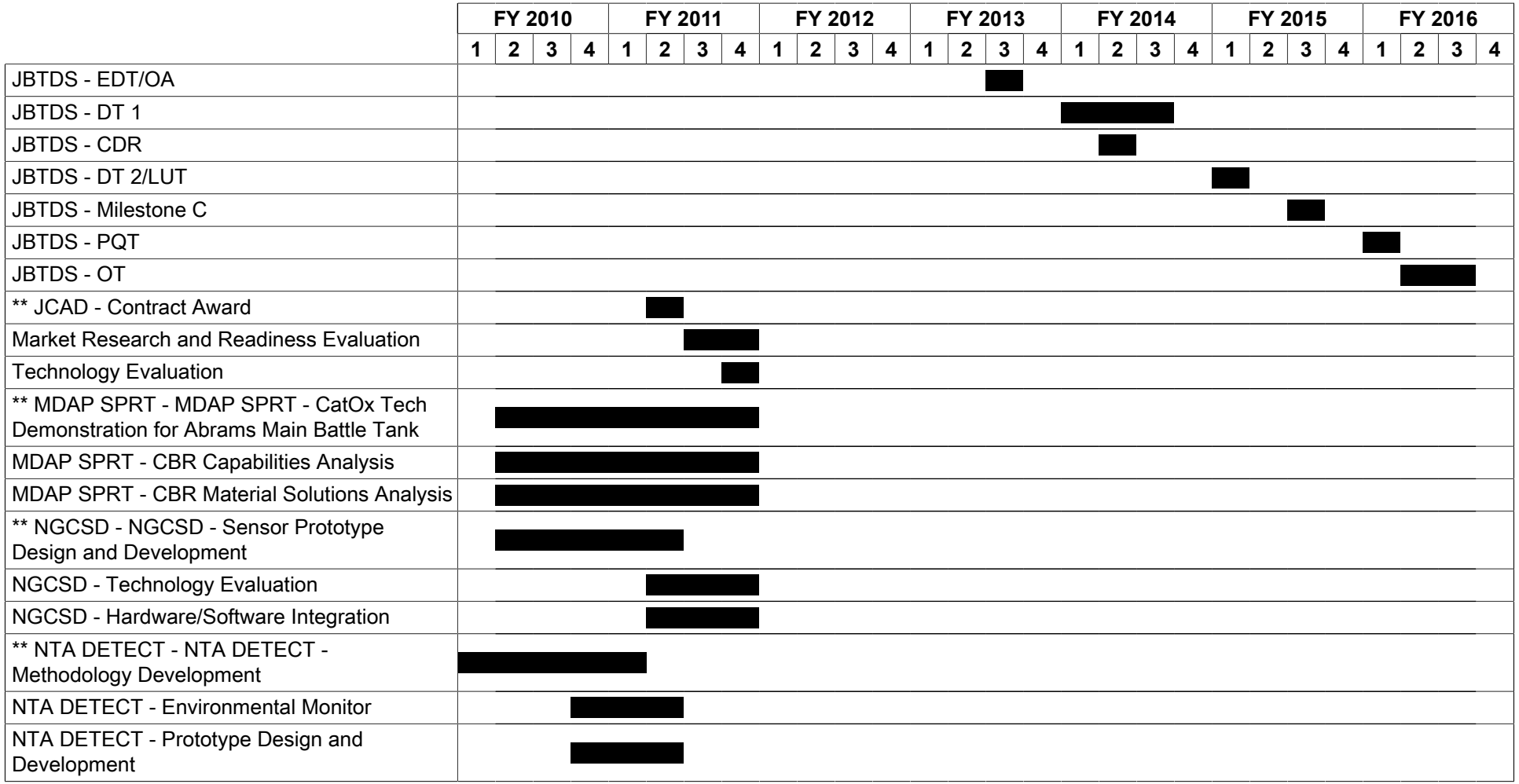

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CBRN DRS - CBRN DRS - Dismounted Reconnaissance (DR) Component Developmental Test	1	2011	3	2011
CBRN DRS - Dismounted Reconnaissance (DR) Milestone (MS) B	2	2011	2	2011
CBRN DRS - Dismounted Reconnaissance (DR) EMD Phase	2	2011	4	2012
CBRN DRS - Dismounted Reconnaissance (DR) Production & Deployment Phase	4	2012	4	2013
** JBSDS - JBSDS Increment 2 - Milestone A	2	2011	2	2011
JBSDS Increment 2 - Technology Development	2	2011	2	2014
JBSDS Increment 2 - Preliminary Design Review	2	2014	2	2014
JBSDS Increment 2 - Milestone B	2	2014	2	2014
JBSDS Increment 2 - Engineering & Manufacturing Development	2	2014	4	2016
** JBTDS - JBTDS - JRO Led Analysis of Alternatives (AoA)	1	2010	4	2010
JBTDS - MS A Decision	2	2011	2	2011
JBTDS - Competitive Prototyping Contract Award	3	2011	3	2011
JBTDS - Competitive Prototyping Testing	4	2011	1	2012
JBTDS - Capability Development Document	2	2011	2	2012
JBTDS - PDR	2	2012	2	2012
JBTDS - MS B Decision	4	2012	4	2012
JBTDS - EMD Contract Award	1	2013	1	2013
JBTDS - EDT/OA	3	2013	3	2013
JBTDS - DT 1	1	2014	3	2014
JBTDS - CDR	2	2014	2	2014
JBTDS - DT 2/LUT	1	2015	1	2015
JBTDS - Milestone C	3	2015	3	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** CA4: *CONTAMINATION AVOIDANCE (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JBTDS - PQT	1	2016	1	2016
JBTDS - OT	2	2016	3	2016
** JCAD - Contract Award	2	2011	2	2011
Market Research and Readiness Evaluation	3	2011	4	2011
Technology Evaluation	4	2011	4	2011
** MDAP SPRT - MDAP SPRT - CatOx Tech Demonstration for Abrams Main Battle Tank	2	2010	4	2011
MDAP SPRT - CBR Capabilities Analysis	2	2010	4	2011
MDAP SPRT - CBR Material Solutions Analysis	2	2010	4	2011
** NGCSD - NGCSD - Sensor Prototype Design and Development	2	2010	2	2011
NGCSD - Technology Evaluation	2	2011	4	2011
NGCSD - Hardware/Software Integration	2	2011	4	2011
** NTA DETECT - NTA DETECT - Methodology Development	1	2010	1	2011
NTA DETECT - Environmental Monitor	4	2010	2	2011
NTA DETECT - Prototype Design and Development	4	2010	2	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT CM4: *HOMELAND DEFENSE (ACD&P)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CM4: *HOMELAND DEFENSE (ACD&P)*	5.666	9.526	14.117	-	14.117	2.966	-	-	-	0.000	32.275
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Advanced Component Development and Prototypes (ACD&P) Project supports Component Advanced Development and System Integration (CAD/SI) 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: Initial 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)	FY 2010	FY 2011	FY 2012
Title: 1) CALS - System Engineering and Program Management	4.536	2.206	3.315
Description: 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.)			
FY 2010 Accomplishments: Initiated System Engineering and Program Management - Engineering Support, System Integration Laboratory Design oversight and ongoing support, Modeling and Simulation, prepared acquisition documentation required for Milestone A, supported Joint User Working Group sessions, and reviewed significant findings arising from the CALS Analysis of Alternatives.			
FY 2011 Plans: Continued System Engineering and Program Management Support at the initiation of the Technology Development Phase, provided Engineering support, System Integration Laboratory efforts, Modeling and Simulation, Oversight to Component Technology Down Select and Contract Development/Procurement actions.			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
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, contract actions in support of modular design concepts and preparation for Preliminary Design Review.			
Title: 2) CALS - System Integration Laboratory ***Description:*** 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. ***FY 2010 Accomplishments:*** Initiated and completed stand up of the System Integration Laboratory Capability.	1.130	-	-
Title: 3) CALS - Development Engineering - Component Evaluation and Subsystem Design ***Description:*** 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. ***FY 2011 Plans:*** Initiated subsystem component evaluation and began module design of alternative system module and system configurations. ***FY 2012 Plans:*** Complete subsystem component evaluation and module design of alternative system module and system configurations.	-	6.812	1.530
Title: 4) CALS - Production Engineering and Planning ***Description:*** 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. ***FY 2011 Plans:*** Initiate producibility, quality assurance and logistics studies required to support the development of modules for the CALS. ***FY 2012 Plans:*** Complete producibility, quality assurance and logistics studies required to support development of modules for the CALS.	-	0.508	0.704
Title: 5) CALS - Subsystem (Module) Development Tooling	-	-	1.224

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Planning, design, assembly, installation, and rework of all tools, inspection equipment, and test equipment supporting the development of each subsystem component (Module). Includes time expended in determining tool, inspection, and test equipment requirements; as well as, the costs of new materials used in the installation, modification, and rework of dies, jigs, fixtures, inspection equipment, handling equipment, work platforms, and test equipment used to develop each subsystem component (Module). ***FY 2012 Plans:*** Conduct planning and preparation of tools, equipment, work platforms and new materials required to fabricate, integrate and assemble unique CALS subsystem modules for test and evaluation.			
Title: 6) CALS - Subsystem (Module) Prototype Manufacturing ***Description:*** 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). ***FY 2012 Plans:*** Develops and manufactures unique CALS subsystem (Module) prototypes.	-	-	5.508
Title: 7) CALS - System Test and Evaluation ***Description:*** System-related test activities to include detailed planning, conduct, support, data reduction, and reports from such testing. ***FY 2012 Plans:*** Initiate and complete test and evaluation of CALS Subsystem (Modules).	-	-	1.836
Accomplishments/Planned Programs Subtotals	5.666	9.526	14.117

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• CM5: *HOMELAND DEFENSE (SDD)*	2.861	1.166	9.109		9.109	13.829	4.961	1.979	1.954	Continuing	Continuing
	12.565	39.862	15.900		15.900	28.797	20.044	30.519	32.304	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CM4: *HOMELAND DEFENSE (ACD&P)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JS0004: *WMD - CIVIL SUPPORT TEAMS (WMD CST)*											
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	0.000	0.000	0.000		0.000	0.000	14.765	19.962	29.608	Continuing	Continuing
• JS0500: *CB INSTALLATION/ FORCE PROTECTION PROGRAM (FORCE PROT)*	54.123	50.773	0.000		0.000	0.000	0.000	0.000	0.000	0.000	104.896

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.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CALS - HW SB - CALS Subsystem Down Selection	C/CPIF	TBD:	-	0.756	Feb 2011	-		-		-	0.000	0.756	0.000
HW SB - CALS Subsystem Down Selection	MIPR	TBD:	-	0.381	Feb 2011	-		-		-	0.000	0.381	0.000
HW S - CALS Module Design	C/CPIF	TBD:	-	0.635	Feb 2011	0.491	Nov 2011	-		0.491	0.000	1.126	0.000
HW S - CALS Module Design #2	MIPR	TBD:	-	0.323	Feb 2011	0.184	Nov 2011	-		0.184	0.000	0.507	0.000
HW S - CALS Prototype Systems	C/CPIF	TBD:	-	-		5.508	Feb 2012	-		5.508	0.000	5.508	0.000
		Subtotal	-	2.095		6.183		-		6.183	0.000	8.278	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CALS - ES S - Engineering Support System - CALS	MIPR	Edgewood Chemical and Biological Center:Edgewood, Md	1.101	0.797	Feb 2011	0.782	Nov 2011	-		0.782	0.000	2.680	0.000
ES S - Modeling and Simulation Support	MIPR	Edgewood Chemical and Biological Center:Edgewood, Md	0.181	0.131	Feb 2011	0.129	Feb 2012	-		0.129	0.000	0.441	0.000
ILS C - Retooling and Preparation for Module Manufacture	C/CPIF	TBD:	-	-		1.224	Feb 2012	-		1.224	0.000	1.224	0.000
		Subtotal	1.282	0.928		2.135		-		2.135	0.000	4.345	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CALS - OTHT C - Analytical Detection Component Testing	C/CPIF	TBD:	-	4.063	Feb 2011	0.732	Nov 2011	-		0.732	0.000	4.795	0.000
OTHT C - Analytical Detection Component Testing	MIPR	TBD:	-	0.660	May 2011	0.122	Nov 2011	-		0.122	0.000	0.782	0.000
DTE SB - CALS Module Test and Evaluation	MIPR	TBD:	-	-		1.836	May 2012	-		1.836	0.000	1.836	0.000
		Subtotal	-	4.723		2.690		-		2.690	0.000	7.413	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CALS - PM/MS S - Program Office - Planning and Programming	MIPR	Various:	3.254	1.278	Feb 2011	2.405	Feb 2012	-		2.405	0.000	6.937	0.000
PM/MS SB - Module Production Engr and Planning	C/CPIF	TBD:	-	0.502	May 2011	0.704	Feb 2012	-		0.704	0.000	1.206	0.000
		Subtotal	3.254	1.780		3.109		-		3.109	0.000	8.143	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.536	9.526		14.117		-		14.117	0.000	28.179	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT CM4: *HOMELAND DEFENSE (ACD&P)*

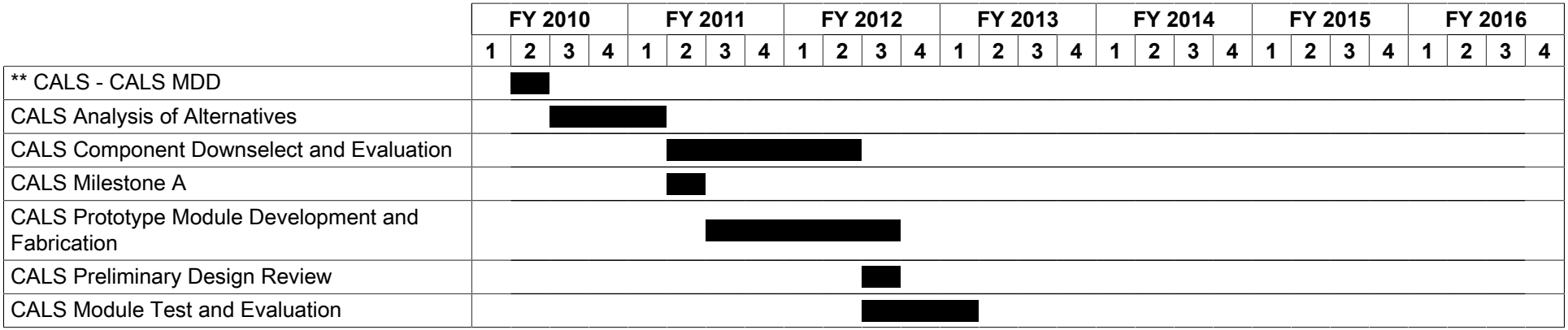

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** CM4: *HOMELAND DEFENSE (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CALS - CALS MDD	2	2010	2	2010
CALS Analysis of Alternatives	3	2010	1	2011
CALS Component Downselect and Evaluation	2	2011	2	2012
CALS Milestone A	2	2011	2	2011
CALS Prototype Module Development and Fabrication	3	2011	3	2012
CALS Preliminary Design Review	3	2012	3	2012
CALS Module Test and Evaluation	3	2012	1	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	14.867	7.051	38.737	-	38.737	30.608	6.430	7.383	12.553	Continuing	Continuing
Quantity of RDT&E Articles	1	0	10		10	0	0	0	0		

A. Mission Description and Budget Item Justification

This ACD&P project supports the development of decontamination systems utilizing solutions that will remove and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment. Decontamination 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 over currently fielded decontaminants.

This funding supports Decontamination Competitive Prototype (DC PROTO), Decontamination Family of Systems (DFoS), Human Remains Decontamination System (HRDS), Joint Platform Interior Decontamination (JPID) and Congressional Interest Item programs.

The Decontamination Competitive Prototype (DC PROTO) effort will support the JPID program of record in evaluating prototype systems that will demonstrate the best decontamination technology to increase sensitive equipment and platform interior decontamination capabilities and the Joint Strike Fighter (JSF) interior/exterior decontamination requirement. DC PROTO will support the development of the JPID MS A documentation and the release of the Request for Proposal (RFP) to support the JPID source selection and competitive prototyping efforts.

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. Leveraging the outcomes of the Materiel Development Decision (MDD) (2QFY11) directed Analysis of Alternatives, 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/exteriors, terrain, and fixed facilities.

Tactical, Cargo, and Rotary Wing Aircraft Decon (Congressional Interest Item): Develop the capability to decontaminate a broad range of military aircraft in the event of a chemical or biological attack.

The Contaminated Human Remains Pouch (CHRP) will provide the capability to protect personnel handling Chemical (C) and Biological (B) Warfare Agents (WA) Contaminated Human Remains (CHR). The CHRP Inc I will contain CHR from point of fatality to the Mortuary Affairs (MA) activity. Starting in FY12, the CHRP will be funded under the Decontamination Family of Systems (DFoS) program funding line.

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The Joint Platform Interior Decontamination (JPID) program will provide immediate, operational and thorough decontamination capabilities for interiors of vehicles, ships, fixed site facilities, mobile maintenance facilities, aircraft and sensitive equipment during ground/shipboard operations in hostile and non-hostile environments that have been exposed to chemical, biological, radiological and nuclear (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 2010	FY 2011	FY 2012
Title: 1) DC PROTO ***FY 2010 Accomplishments:*** Conduct engineering, testing and logistics planning and documentation to support JPID MS A and competitive prototype.	5.461	-	-
Title: 2) DC PROTO ***FY 2010 Accomplishments:*** Develop/release Request for Proposal (RFP) and conduct source selection activities.	1.500	-	-
Title: 3) DC PROTO ***FY 2010 Accomplishments:*** Acquisition/transport/sustainment of test support assets.	1.800	-	-
Title: 4) DFoS ***FY 2010 Accomplishments:*** Initiated development of test plans and formulation studies of surfactant technology.	0.300	-	-
Title: 5) DFoS ***FY 2010 Accomplishments:*** Initiated development of test plans and formulation of contamination indicator/decontamination assurance spray technology.	0.320	-	-
Title: 6) DFoS ***FY 2011 Plans:*** Initiate engineering, testing and logistics planning and documentation to support non-traditional agent (NTA) test and evaluation (efficacy, materials compatibility, live agent tests) efforts for decontamination assurance spray, chemical decontaminant, reactive skin decontamination lotion/oxime evaluation for NTA decontamination on equipment, effluent control and strippable/sealant coatings in support of 20th Support Command UNS. ***FY 2012 Plans:*** Conduct development of non-traditional agent (NTA) efforts to include initial studies and modeling for effluent decontamination and strippable/sealant coatings; conduct sensitivity efficacy for the decontamination assurance spray; conduct chemical efficacy	-	7.051	7.882

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
and material compatibility for decontaminants; evaluation of reactive skin decontamination lotion/oxime for NTA decontamination on equipment.			
Title: 7) DFoS ***FY 2012 Plans:*** Initiate engineering, testing and logistics planning and documentation to support tech development of Contamination Indicator.	-	-	0.499
Title: 8) DFoS ***FY 2012 Plans:*** Initiate engineering, testing and logistics planning and documentation to support tech development of Dial A Decon.	-	-	0.998
Title: 9) DFoS ***FY 2012 Plans:*** Continue developmental testing (i.e. efficacy, material compatibility) of General Purpose Decon, Decontaminant Wipes, Man Portable Decon System and Coatings.	-	-	8.818
Title: 10) HRDS ***FY 2010 Accomplishments:*** Develop and refine metrics to support Analysis of Alternatives; conduct engineering, testing, logistics planning and documentation (Technology Development Strategy (TDS), Test and Evaluation Strategy (TES) and Systems Engineering Plan (SEP)) to support the CHRP.	2.796	-	-
Title: 11) HRDS ***FY 2010 Accomplishments:*** Contaminated Human Remains Pouch (CHRP) document preparation, technical support and test planning in support of milestone decision.	0.898	-	-
Title: 12) JPID ***FY 2010 Accomplishments:*** Congressional Interest Item - Development of a prototype (at $900 thousand each), conduct engineering, design, fabrication, program management, and develop documentation to support Tactical, Cargo, & Rotary Wing Aircraft Decontamination.	1.792	-	-
Title: 13) JPID ***FY 2012 Plans:***	-	-	14.552

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Develop test plans and fabricate 10 Prototypes (at $550 thousand each) for Competitive Prototype Testing.			
Title: 14) JPID	-	-	5.988
FY 2012 Plans: Conduct Competitive Prototype testing (Chem/Bio efficacy, functionality and large frame aircraft testing).			
Accomplishments/Planned Programs Subtotals	14.867	7.051	38.737

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• DE5: *DECONTAMINATION SYSTEMS (SDD)*	17.195	28.499	4.370		4.370	9.189	27.426	22.381	12.410	Continuing	Continuing
• JD0050: *DECONTAMINANT SYSTEM OF SYSTEMS*	0.000	0.000	0.000		0.000	0.000	2.096	10.680	22.466	Continuing	Continuing
• JD0055: *JOINT SERVICE PERSONNEL/SKIN DECON SYSTEM (JSPDS)*	4.466	0.000	6.466		6.466	0.000	2.994	2.994	0.000	0.000	16.920
• JD0056: *JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)*	24.040	18.160	0.000		0.000	0.000	0.000	0.000	0.000	0.000	42.200
• JD0060: *JOINT PLATFORM INTERIOR DECON (JPID)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	6.437	Continuing	Continuing
• JD0062: *HUMAN REMAINS DECON SYSTEM (HRDS)*	0.000	3.410	0.000		0.000	0.000	0.000	0.000	0.000	0.000	3.410

D. Acquisition Strategy

DC PROTO

DC PROTO will conduct a Sources Sought in support of JPID for prototypes suitable for sensitive equipment and platform interior decontamination. The DC PROTO will integrate into the JPID program.

DFoS

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

The Decontamination Family of Systems (DFoS) will utilize an incremental acquisition strategy to transition various developmental technology efforts (COTS, Joint Science Technology Office (JSTO), Defense Threat Reduction Agency (DTRA) efforts, etc.) 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. The DFoS acquisition will be managed as a Family of Systems (FoS), leveraging differing technologies in each subsystem to fulfill Warfighter capability gaps. A multi-phased Analysis of Alternatives (AoA) will be conducted to identify and evaluate the operational effectiveness of potential material solutions to satisfy Service requirements. As each AoA phase is completed, individual systems and their respective phases of entry will be identified. Industry and government labs will be solicited and through competitive prototyping, materiel solutions will be down-selected for continued development and fielding as a new or enhanced joint force capability.

HRDS

The Human Remains Decontamination System (HRDS) acquisition will employ an incremental development strategy, leveraging Commercial-off-the-Shelf (COTS)/ Non-developmental Item (NDI) technologies that will lead to a fielded capability to fulfill gaps as described in the Mortuary Affairs (MA) Initial Capabilities Document (ICD) for safe intra-theater handling and transport of CHR. Due to maturity of technology and initiatives to reduce redundancy as defined by the HRDS FoS Analysis of Alternatives, the Contaminated Human Remains Pouch (CHRP) will be the sole system developed in this budget cycle. 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.

HRDS will integrate into the DFoS program.

JPID

JPID will utilize an incremental evolutionary acquisition strategy to provide immediate, operational and thorough decontamination capabilities for interiors of vehicles, ships, fixed site facilities, mobile maintenance facilities, aircraft and sensitive equipment during ground/shipboard operations in hostile and non-hostile environments that have been exposed to chemical, biological, radiological and nuclear (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. JPID will employ a competitive prototyping effort to facilitate the identification and evaluation of NDI and/or commercially available capabilities that can meet the JPID requirements. An RFP will be released to solicit industry for NDI/commercial technologies capable of meeting some or all of the JPID requirements using a full and open competition, best value contract strategy that may result in multiple contract awards.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - HW S - UNS NTA Decon Assurance Spray	C/FFP	TBD:	-	0.500	Feb 2011	0.699	Feb 2012	-		0.699	Continuing	Continuing	0.000
HW S - UNS NTA Chemical Decon	C/FFP	TBD:	-	0.322	Feb 2011	1.014	Feb 2012	-		1.014	Continuing	Continuing	0.000
HW S - UNS Effluent Decon for NTA Contaminated Run-off	C/FFP	TBD:	-	-		0.969	Feb 2012	-		0.969	Continuing	Continuing	0.000
HW S - UNS NTA Strippable/ Sealant Coatings	C/FFP	TBD:	-	0.200	Feb 2011	0.899	Feb 2012	-		0.899	Continuing	Continuing	0.000
HW S - Contamination Indicator/Decon Assurance Spray	C/FFP	AGENTASE LLC:Pittsburgh, PA	0.320	-		0.500	Feb 2012	-		0.500	Continuing	Continuing	0.000
HW S - General Purpose Decon	C/FFP	TBD:	-	-		0.999	Feb 2012	-		0.999	Continuing	Continuing	0.000
HW S - Decon Wipes	C/FFP	TBD:	-	-		0.699	Feb 2012	-		0.699	Continuing	Continuing	0.000
HW S - Man Portable Decon System	C/FFP	TBD:	-	-		0.999	Feb 2012	-		0.999	Continuing	Continuing	0.000
HW S - Coatings	C/FFP	TBD:	-	-		0.399	Feb 2012	-		0.399	Continuing	Continuing	0.000
HW S - Dial A Decon	C/FFP	TBD:	-	-		0.836	Feb 2012	-		0.836	Continuing	Continuing	0.000
** JPID - HW S - Prototype Development Contract	C/FFP	Various:	-	-		8.989	Nov 2011	-		8.989	Continuing	Continuing	0.000
		Subtotal	0.320	1.022		17.002		-		17.002			0.000

Remarks

DFoS funding increased for NTAs in FY11.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - ES S - IPT Technical Support	MIPR	Various:	-	0.629	Feb 2011	0.499	Feb 2012	-		0.499	0.000	1.128	0.000
	MIPR	TBD:	-	-		0.649	Feb 2012	-		0.649	0.000	0.649	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JPID - ES S - Competitive Prototype assessment													
		Subtotal	-	0.629		1.148		-		1.148	0.000	1.777	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - DTE S - UNS NTA Decon Assurance Spray	MIPR	TBD:	-	0.760	Feb 2011	1.034	Feb 2012	-		1.034	0.000	1.794	0.000
DTE S - UNS NTA Chemical Decon	MIPR	TBD:	-	1.500	Feb 2011	1.697	Feb 2012	-		1.697	0.000	3.197	0.000
DTE S - UNS RSDL/Oxime evaluation for NTA Decon on Equipment	MIPR	TBD:	-	1.300	Feb 2011	-		-		-	0.000	1.300	0.000
DTE S - UNS Effluent Decon for NTA Contaminated Run-off	MIPR	TBD:	-	0.190	Feb 2011	0.165	Feb 2012	-		0.165	0.000	0.355	0.000
DTE S - UNSNTA Strippable / Sealant Coatings	MIPR	TBD:	-	1.010	Feb 2011	0.435	Feb 2012	-		0.435	0.000	1.445	0.000
DTE S - General Purpose Decon	MIPR	TBD:	-	-		1.570	May 2012	-		1.570	0.000	1.570	0.000
DTE S - Decon Wipes	MIPR	TBD:	-	-		1.056	May 2012	-		1.056	0.000	1.056	0.000
DTE S - Man Portable Decon System	MIPR	TBD:	-	-		0.835	May 2012	-		0.835	0.000	0.835	0.000
DTE S - Coatings TTI	MIPR	TBD:	-	-		1.435	May 2012	-		1.435	0.000	1.435	0.000
** JPID - DTE S - Competitive Prototype testing	MIPR	Various:	-	-		5.988	May 2012	-		5.988	0.000	5.988	0.000
		Subtotal	-	4.760		14.215		-		14.215	0.000	18.975	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - PM/MS S - DFoS Program Management Support, Integrated Product Team and Technical Support	MIPR	RDECOM:Natick, MA	-	-		0.800	Nov 2011	-		0.800	0.000	0.800	0.000
PM/MS S - Program Management Support, Integrated Product Team and Technical Support (ATs)	MIPR	Marine Corps Systems Command:Quantico, VA	-	0.640	Feb 2011	0.658	Feb 2012	-		0.658	0.000	1.298	0.000
** JPID - PM/MS S - Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	0.179	-		4.914	Nov 2011	-		4.914	0.000	5.093	0.000
		Subtotal	0.179	0.640		6.372		-		6.372	0.000	7.191	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.499	7.051		38.737		-		38.737			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

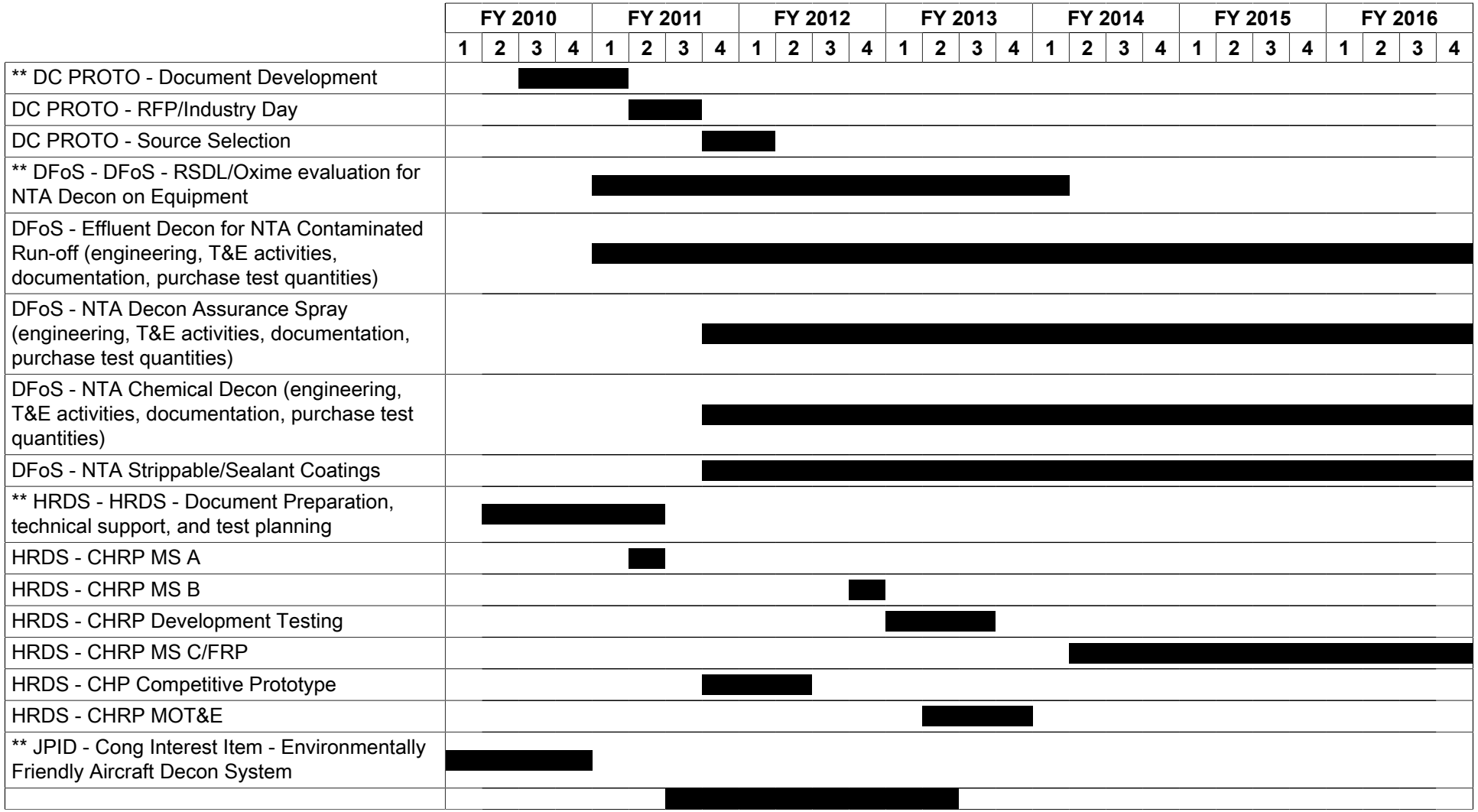

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	PROJECT DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

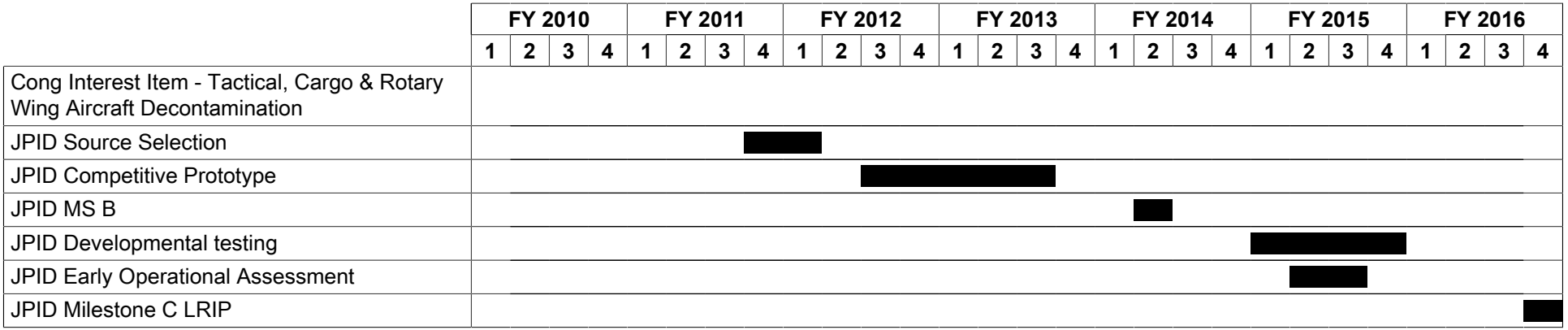

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** DC PROTO - Document Development	3	2010	1	2011
DC PROTO - RFP/Industry Day	2	2011	3	2011
DC PROTO - Source Selection	4	2011	1	2012
** DFoS - DFoS - RSDL/Oxime evaluation for NTA Decon on Equipment	1	2011	1	2014
DFoS - Effluent Decon for NTA Contaminated Run-off (engineering, T&E activities, documentation, purchase test quantities)	1	2011	4	2016
DFoS - NTA Decon Assurance Spray (engineering, T&E activities, documentation, purchase test quantities)	4	2011	4	2016
DFoS - NTA Chemical Decon (engineering, T&E activities, documentation, purchase test quantities)	4	2011	4	2016
DFoS - NTA Strippable/Sealant Coatings	4	2011	4	2016
** HRDS - HRDS - Document Preparation, technical support, and test planning	2	2010	2	2011
HRDS - CHRP MS A	2	2011	2	2011
HRDS - CHRP MS B	4	2012	4	2012
HRDS - CHRP Development Testing	1	2013	3	2013
HRDS - CHRP MS C/FRP	2	2014	4	2016
HRDS - CHP Competitive Prototype	4	2011	2	2012
HRDS - CHRP MOT&E	2	2013	4	2013
** JPID - Cong Interest Item - Environmentally Friendly Aircraft Decon System	1	2010	4	2010
Cong Interest Item - Tactical, Cargo & Rotary Wing Aircraft Decontamination	3	2011	2	2013
JPID Source Selection	4	2011	1	2012
JPID Competitive Prototype	3	2012	3	2013
JPID MS B	2	2014	2	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** DE4: *DECONTAMINATION SYSTEMS (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JPID Developmental testing	1	2015	4	2015
JPID Early Operational Assessment	2	2015	3	2015
JPID Milestone C LRIP	4	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT IP4: *INDIVIDUAL PROTECTION (ACD&P)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IP4: *INDIVIDUAL PROTECTION (ACD&P)*	2.305	3.172	-	-	-	1.088	3.661	6.719	4.616	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project funds ACD&P of a Uniform Integrated Protection Ensemble (UIPE) (formerly Lightweight Chemical Biological Ensemble (LCBE)), aimed at improving current protection levels while reducing physiological and logistical burdens. The goal is to provide equipment that allows the individual soldier, sailor, airman, or Marine to operate in a contaminated Chemical and Biological (CB) environment with no or minimal degradation to his/her performance. UIPE is supported by an Initial Capabilities Document (ICD), MS A and ongoing technology development phase to provide UIPE Increment 1 ensembles to USSOCOM and the U.S. Navy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) UIPE Incr. 1 (LCBE)	2.305	3.172	-
FY 2010 Accomplishments: UIPE Incr. 1 (LCBE) - Prepared MS A documentation and completed MS A. Continued baseline assessments of thermal burden and heat stress reduction. Initiated validation, verification, and accreditation processes for thermal burden models. Completed Request for Information (RFI). Completed Technology Readiness Assessment (TRA).			
FY 2011 Plans: UIPE Incr. 1 (LCBE) - Prepare Request for Proposal (RFP). Initiate developmental testing (DT) efforts for UIPE Increment 1. Acquire prototypes and perform physical testing and chemical agent testing. Initiate development to reduce thermal burden/bulk/ weight over existing CB ensemble, increase cooling/venting potential, and improve operational capabilities. Prepare TRA for MS B.			
Accomplishments/Planned Programs Subtotals	2.305	3.172	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• IP5: *INDIVIDUAL PROTECTION (SDD)*	19.848	9.678	11.490		11.490	11.768	1.979	0.989	1.963	Continuing	Continuing
• JSM001: *JOINT SERVICE MASK LEAKAGE TESTER (JSMLTS)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• MA0400: *PROTECTIVE CLOTHING (JSLIST)*	21.493	17.887	0.000		0.000	0.000	0.000	0.000	0.000	0.000	39.380

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT IP4: *INDIVIDUAL PROTECTION (ACD&P)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MA0401: *CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)*	0.000	0.000	1.000		1.000	7.247	13.595	12.774	16.867	Continuing	Continuing

D. Acquisition Strategy

LCBE

The LCBE program has been renamed as the Uniform Integrated Protection Ensemble (UIPE) program.

The UIPE will use an evolutionary acquisition strategy with phased development. The UIPE will provide an operationally useful and supportable capability in as short a time as possible. Accordingly, Increment 1 of UIPE will incorporate an accelerated development cycle leveraging existing COTS technologies that will, at a minimum, provide a lightweight CB protective garment capability. Gate testing and down-selection of prototypes will comprise the initial phases of the Government's testing program. A competitively awarded contract is planned for DT and Operational Assessment (OA) will occur prior to MS C. Appropriate system requirements reviews, test readiness reviews, producibility reviews and audits will be scheduled as required prior to each milestone.

Future increments of UIPE shall be defined via separate Capability Development Document (CDDs)/Capability Production Document (CPDs) and will follow a similar path/process from MS A or MS B through MS C/FRP and will leverage preceding efforts to the greatest extent possible, maintaining commonality and synergy across all increments.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT IP4: *INDIVIDUAL PROTECTION (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** LCBE - HW S - UIPE Competitive Prototyping	MIPR	Various:	-	0.612	May 2011	-		-		-	Continuing	Continuing	0.000
		Subtotal	-	0.612		-		-		-			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** LCBE - TD/D SB - UIPE Engineering IPT	MIPR	Various:	2.326	0.600	Feb 2011	-		-		-	0.000	2.926	0.000
		Subtotal	2.326	0.600		-		-		-	0.000	2.926	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** LCBE - PM/MS SB - Program Management	MIPR	Various:	1.158	1.960	Feb 2011	-		-		-	0.000	3.118	0.000
		Subtotal	1.158	1.960		-		-		-	0.000	3.118	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.484	3.172		-		-		-			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** IP4: *INDIVIDUAL PROTECTION (ACD&P)*

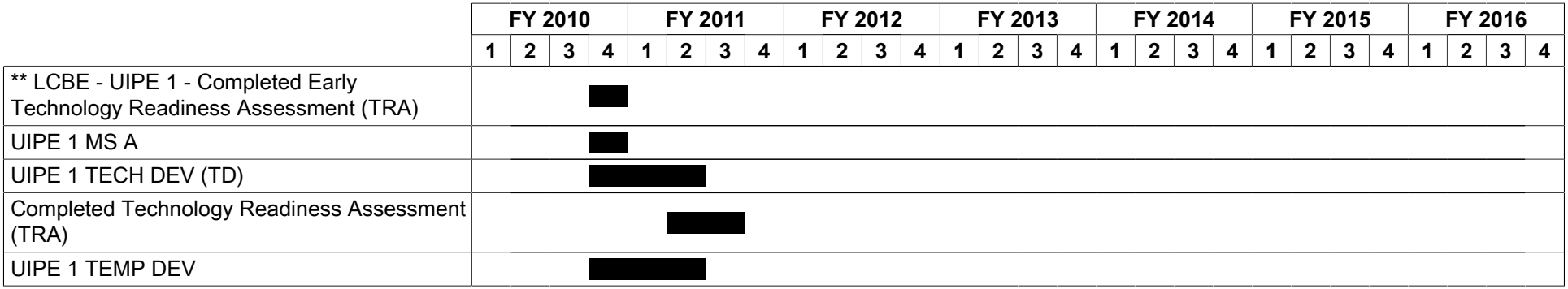

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** IP4: *INDIVIDUAL PROTECTION (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** LCBE - UIPE 1 - Completed Early Technology Readiness Assessment (TRA)	4	2010	4	2010
UIPE 1 MS A	4	2010	4	2010
UIPE 1 TECH DEV (TD)	4	2010	2	2011
Completed Technology Readiness Assessment (TRA)	2	2011	3	2011
UIPE 1 TEMP DEV	4	2010	2	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT IS4: *INFORMATION SYSTEMS (ACD&P)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IS4: *INFORMATION SYSTEMS (ACD&P)*	13.914	11.221	7.420	-	7.420	14.682	-	-	-	0.000	47.237
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project provides for Advanced Component Development and Prototypes (ACD&P). Specifically it supports the Joint Effects Model (JEM) Program and the Joint Warning and Reporting Network (JWARN) Program.

The Joint Effects Model (JEM) is DoD's only accredited model 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) 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 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JEM	4.341	0.689	-
Description: Analysis of Alternatives Support			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT IS4: *INFORMATION SYSTEMS (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Evaluated and provided CBRN subject matter experts to support the JEM Increment 2 AoA. Compiled assessment data and published the report. Provided report and supporting documentation to the Joint Requirements Office for CBD. ***FY 2011 Plans:*** Provide Chemical, Biological, Radiological and Nuclear subject matter experts to support the Analysis of Technical Alternatives (ATA) on the next required increment of capability.			
Title: 2) JEM ***Description:*** Prototyping ***FY 2011 Plans:*** Initiate prototyping effort for the next increment of JEM capability. Modeling to support biological surveillance, medical incidents, urban modeling, source term estimation, population migration, and littoral/coastal zone weather.	-	4.863	-
Title: 3) JEM ***Description:*** User Assessments and Demonstrations ***FY 2011 Plans:*** Conduct FY11 User Assessments and Demonstrations to validate requirements and system performance. Evaluate critical science and technology within software prototype(s). Verify and validate S&T component capabilities align with the user requirements.	-	1.326	-
Title: 4) JEM ***Description:*** Test & Evaluation (T&E) ***FY 2010 Accomplishments:*** Initiated work on the Test and Evaluation Strategy (TES). Supported development of the JEM AoA Study Plan Guidance and Study Plan. ***FY 2011 Plans:*** Continue the development and staffing of the TES. Initiate development testing, analysis and provide input on source selection on competitive prototypes. Support Technology Readiness Assessments of software transitioned from Science and Technology	2.514	0.961	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
providers. Develop Test & Evaluation Master Plan (TEMP) for the next increment of capability of JEM. Support Capabilities Development Document (CDD) generation.			
Title: 5) JEM ***Description:*** Administrative Preparation for Development and Prototyping Contracts ***FY 2010 Accomplishments:*** Initiated contractual planning efforts in preparation for MS A and Technology Development/prototyping phase. ***FY 2011 Plans:*** Continue contractual planning efforts in preparation for MS A and Technology Development/prototyping phase. As a cost cutting measure, evaluate option to continue use of existing contract vehicle in support of Prototyping efforts. Initiate pre-MS B contractual efforts: develop proposal package, release draft Request for Proposal (RFP), prepare final Engineering and Manufacturing Development (EM&D) phase request for proposal, release RFP, conduct source selection training, conduct source selection and complete proposal evaluations.	0.626	0.396	-
Title: 6) JEM ***Description:*** Management Support ***FY 2010 Accomplishments:*** Provided program planning, financial management, contracting, schedule, and acquisition oversight support. Developed integrated master schedule, Technology Development Strategy (TDS) and other statutory and regulatory acquisition documents required for MS A. ***FY 2011 Plans:*** Continue efforts to provide strategic, tactical planning, program/financial management, costing, contracting, scheduling and acquisition oversight support. Assist in the development of Capabilities Development Document (CDD) and other acquisition documents required for MS B. Perform Life-Cycle Cost Estimate.	1.580	1.349	-
Title: 7) JEM ***Description:*** Technical Support ***FY 2010 Accomplishments:***	4.753	1.637	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiated Systems Engineering Plan (SEP) in support of MS A. Supported development of JEM Increment 2 integrated master schedule, Test & Evaluation Strategy (TES), Technology Development Strategy (TDS) and other documents required for MS A. ***FY 2011 Plans:*** Continue risk-reduction efforts to demonstrate viability of the technology concepts proposed for the next increment of JEM capability. Develop preliminary design documentation and support Technology development phase and competitive prototyping. Provide technical support during the development of the Capabilities Development Document (CDD) and requirements analysis processes.			
Title: 8) JWARN - Increment 3 ***Description:*** Analysis of Alternatives (AoA) Support and Analysis of Technical Alternatives (ATA) Evaluation ***FY 2012 Plans:*** Initiate programmatic and Chemical, Biological, Radiological and Nuclear (CBRN) subject matter expertise to support the next increment of JWARN capabilities during the AoA. Evaluate and assess results of AoA/ATA including a Technology Readiness Assessment of the candidate technologies. Analyze impact of implementing the emerging technologies into the JWARN architecture.	-	-	0.446
Title: 9) JWARN Increment 3 ***Description:*** Prototyping ***FY 2012 Plans:*** Initiate competitive prototyping contracting efforts for JWARN to reduce technical risk, validate design and cost estimates as well as refine requirements.	-	-	4.270
Title: 10) JWARN Increment 3 ***Description:*** Technology Demonstrations and User Assessments ***FY 2012 Plans:*** Prepare for and 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).	-	-	0.526
Title: 11) JWARN Increment 3 ***Description:*** Test and Evaluation	-	-	0.668

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Initiate government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during competitive prototyping.			
Title: 12) JWARN Increment 3 ***Description:*** Administrative Preparation for Development Contract ***FY 2012 Plans:*** Initiate pre-MS B contractual efforts to include: developing and releasing Technology Development Request for Proposal (RFP), conducting source selection training, and completing proposal evaluations.	-	-	0.446
Title: 13) JWARN Increment 3 ***Description:*** Management Support ***FY 2012 Plans:*** Provide strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program.	-	-	0.612
Title: 14) JWARN Increment 3 ***Description:*** Technical Support ***FY 2010 Accomplishments:*** Technical evaluation of Analysis of Alternatives (AOA) process for the next increment of JWARN capability. ***FY 2012 Plans:*** Provide engineering and technical support for JWARN development. Provide independent system verification, validation and class type accreditation as required.	0.100	-	0.452
Accomplishments/Planned Programs Subtotals	13.914	11.221	7.420

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	6.551	6.903	3.880		3.880	2.613	1.548	4.682	2.086	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• IS5: *INFORMATION SYSTEMS (SDD)*	17.435	13.844	2.423		2.423	9.523	31.465	25.381	13.010	Continuing	Continuing
• IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	1.284	1.821	6.911		6.911	6.032	4.565	4.264	6.261	Continuing	Continuing
• JC0208: *JOINT EFFECTS MODEL (JEM)*	3.482	3.482	0.000		0.000	0.000	0.000	0.225	1.532	0.000	8.721

D. Acquisition Strategy

JEM

The Joint Effects Model (JEM) is following an evolutionary acquisition approach that will allow rapid fielding of existing technologies while further research and development (R&D) continues in order to mature the technologies required for subsequent versions of JEM. JEM is now being fielded in increments of capabilities. Each increment will retain the functionality of the preceding increment. The JEM development effort will be aligned with the evolving Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) architectures and technologies, as well as, with Service Command and Control (C2) systems. JEM will develop three distinct increments of software. JEM is a web-services based application and has been granted an Interoperability Certificate by the Joint Interoperability Test Command (JITC). The program plans to award competitive contracts using fixed price or cost-plus as appropriate.

JWARN

JWARN will develop and provide Integrated Early Warning capabilities to specified (Common Operating Environment (COE-based)) operational-level Service Command and Control (C2) systems at the Global Command and Control System (GCCS) level, extend the integration effort into the Service tactical (non COE-based) C2 systems, provide connectivity to legacy and newly developed sensors, and complete the development of JWARN.

JWARN will extend these baseline capabilities to emerging, net-centric, Service C2 systems and Service CBRN sensors and detectors as they are developed and fielded. JWARN will also ensure CBRN warning and reporting capabilities remain synchronized with the changing demands of the Warfighter while keeping pace with evolving C2 systems and their architectures, and will further evolve by integrating next generation sensors, detectors and emerging Medical and Biological Surveillance requirements into the CBRN Enterprise.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - SW SB - JEM Increment 2	MIPR	SPAWAR Systems Center:San Diego, CA	-	7.521	Feb 2011	-		-		-	1.205	8.726	0.000
** JWARN - SW S - JWARN	SS/CPAF	TBD:	-	-		4.270	Feb 2012	-		4.270	3.359	7.629	0.000
		Subtotal	-	7.521		4.270		-		4.270	4.564	16.355	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - TD/D SB - JEM Increment 2	C/CPFF	Various:	9.720	0.994	Feb 2011	-	Feb 2012	-		-	1.995	12.709	0.000
** JWARN - TD/D S - JWARN	MIPR	Various:	-	-		0.453	Feb 2012	-		0.453	0.453	0.906	0.000
		Subtotal	9.720	0.994		0.453		-		0.453	2.448	13.615	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - DTE S - JEM Increment 2	MIPR	Various:	2.514	0.961	Feb 2011	-		-		-	3.795	7.270	0.000
** JWARN - OTHT SB - JWARN	PO	Various:	-	-		1.195	Feb 2012	-		1.195	1.754	2.949	0.000
		Subtotal	2.514	0.961		1.195		-		1.195	5.549	10.219	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - PM/MS S - JEM Increment 2	C/CPFF	Battelle Memorial Institute:	1.580	1.745	Feb 2011	-		-		-	1.415	4.740	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JWARN - PM/MS S - JWARN Management Support	SS/CPAF	Various:	0.100	-		1.502	Nov 2011	-		1.502	0.792	2.394	0.000
		Subtotal	1.680	1.745		1.502		-		1.502	2.207	7.134	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.914	11.221		7.420		-		7.420	14.768	47.323	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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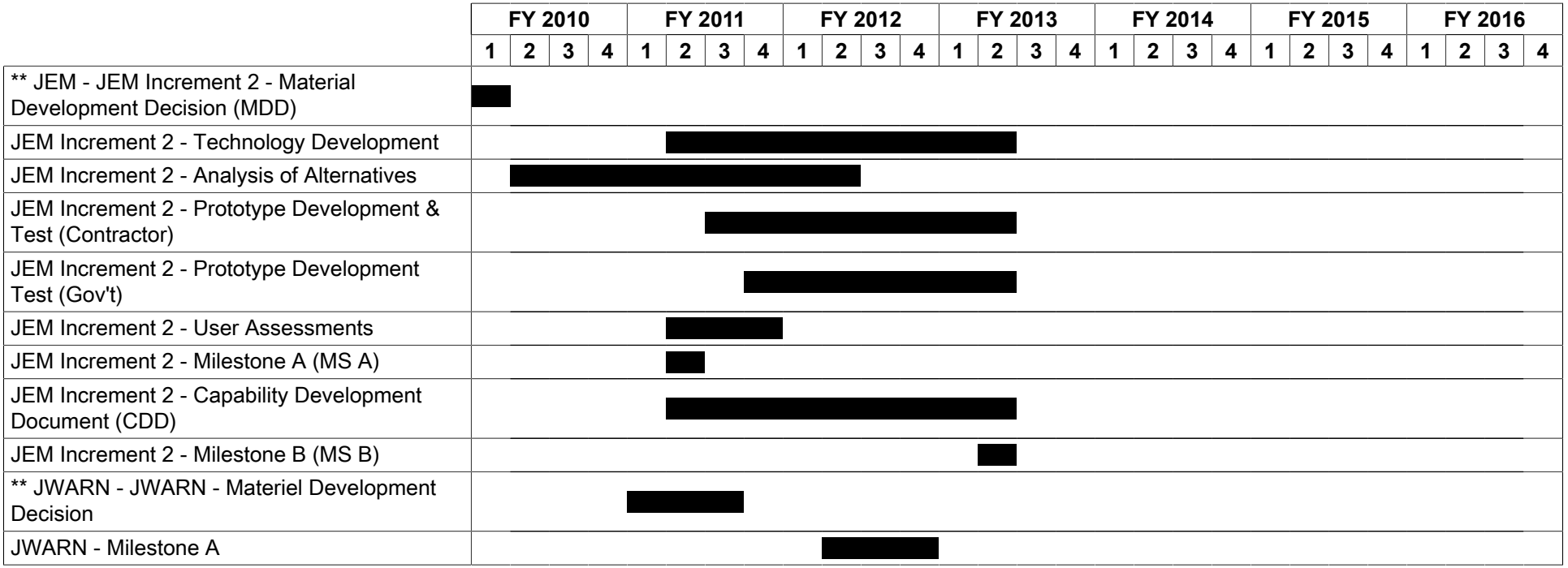

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JEM - JEM Increment 2 - Material Development Decision (MDD)	1	2010	1	2010
JEM Increment 2 - Technology Development	2	2011	2	2013
JEM Increment 2 - Analysis of Alternatives	2	2010	2	2012
JEM Increment 2 - Prototype Development & Test (Contractor)	3	2011	2	2013
JEM Increment 2 - Prototype Development Test (Gov't)	4	2011	2	2013
JEM Increment 2 - User Assessments	2	2011	4	2011
JEM Increment 2 - Milestone A (MS A)	2	2011	2	2011
JEM Increment 2 - Capability Development Document (CDD)	2	2011	2	2013
JEM Increment 2 - Milestone B (MS B)	2	2013	2	2013
** JWARN - JWARN - Materiel Development Decision	1	2011	3	2011
JWARN - Milestone A	2	2012	4	2012

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	95.483	136.975	137.653	-	137.653	150.128	167.604	133.589	119.626	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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

The Medical Countermeasures Initiative (MCMI) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, based on public-private parternship agreements 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 in the advanced development component would be in two areas: 1) further maturation of novel platform/expression systems and integration into a production process, and 2) establishment of a Technical Center of Excellence (TCE) comprised of an advanced development and flexible manufacturing capability. MCMI will address three technical functional areas and capabilities within MB4: technology development of flexible manufacturing platforms, a process development laboratory, and pilot plant.

The Next Generation Diagnostic System (NGDS) will develop and field a common medical test equipment and diagnostic platform among all Military Services. NGDS Increment 1 Commercial Off-the-Shelf (COTS) will identify traditional, enhanced, emerging, and advanced threats (i.e., biowarfare agents, infectious diseases, and engineered diseases). A multi-incremental configuration, evolutionary development and fielding approach is proposed which will provide expanded capability for an early warning tool of health threats, early detection of health events, and overall situational awareness. NGDS Increment 1 (COTS) is composed of platform test equipment hardware, assay test kits specific to BW agents and agents of operational concern, and protocols for sample preparation. System operation for use in laboratories and potentially point of care environments. A COTS system will be procured to meet this requirement. The COTS system will be configured to support forward medical operations for force health protection. The NGDS program will support quality assurance efforts, Food and Drug Administration (FDA) current Good Manufacturing Practices (cGMP) engineering, integration, and FDA clearance. The program will use Procurement funding in FY12 to purchase COTS systems that have FDA clearance. BA5 funding in FY12 will support systems engineer/program management, assay transitions and optimization to the platform(s), and shelf-life testing. FY13-16 BA5 funding will support additional assay development and FDA clearance testing efforts on the COTS platform(s).

NGDS Increment 2 will explore adding new complementary technologies to the NGDS design. A separate Milestone A review will be conducted to start this technology insertion effort, followed by a Milestone B to fully develop a new technology prior to fielding to DoD users. Increment 2 will have a Milestone A by 3QFY12 and will use BA4 funding to mature the technology to compliment the technology in Increment 1.

The Transformational Medical Technologies Initiative (TMTI) was launched to respond to the threat of emerging or intentionally bioengineered biological threats. During FY10 the program was redesignated as the Transformational Medical Technologies (TMT) Program. The TMT mission is to protect the Warfighter from genetically

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engineered biological threats by providing a rapid response capability from identification of pathogens to the delivery of medical countermeasures. This mission is accomplished by developing broad spectrum (multi-agent) and platform-based therapeutics against biological warfare (BW) agents (i.e. one drug that treats multiple agents). TMT has been successful in transitioning previous Science and Technology (S&T) efforts into advanced development. Beginning in FY12 TMT has been separated into four product lines to provide greater program control and granularity: these lines are Hemorrhagic Fever Virus (HFV) Medical Countermeasures (MCMs) (e.g. Ebola virus), Intracellular Bacterial Pathogen (IBP) MCMs (e.g. Tularemia), Emerging Infectious Disease (EID) MCMs, and Platform Technologies. HFV, IBP and EID MCM efforts are further classified as host-directed therapeutics (i.e. drugs that target common pathways within a human to prevent or treat a variety of diseases) or pathogen-directed therapeutics (i.e. drugs that attack a common pathway found in multiple threat agents). TMT's development of medical countermeasures against HFV, IBP and EID FLU requires extensive interaction with the FDA, from pre-clinical research to safety tests in human subjects (Phase 1 clinical studies), efficacy tests in humans/animals (Phase 2 clinical studies or pivotal animal efficacy studies), and expanded safety or efficacy studies (Phase 3 clinical studies), which culminate with a request to the FDA to license/approve, market, and produce a drug. This interaction between the DoD and the FDA results in a coordinated, unified, and safe effort. Additionally, TMT is developing Platform Technologies. These are standalone enabling capabilities that support MCM development and are strategically aligned to 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 three functional areas: Pathogen Characterization, Target Identification, and Bioinfomatics..

The Joint Vaccine Acquisition Program (JVAP) under Chemical Biological Medical Systems (CBMS) 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 BW agents are urgently needed. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons. JVAP initiated the Filovirus Vaccine program in FY10. The Filovirus Vaccine will protect the Warfighter against both Ebola and Marburg exposures. Efforts to be conducted during this period include development of pilot scale manufacturing process to support nonclinical and clinical studies; development of a vaccine formulation that meets the logistical requirements of the DoD; conduct non-clinical studies to demonstrate safety and efficacy; submit an Investigational New Drug (IND) application; and conduct Phase 1 clinical human safety studies. JVAP anticipates that the FDA will approve this product using the Animal Rule, which allows for demonstrating of efficacy in relevant animal model(s).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) MCMI	-	-	13.769
FY 2012 Plans: Establish an advanced development capability for technology development of manufacturing platforms for medical countermeasures (MCMs). Compile and manage technology information for MCMs and perform advanced process development activities for selected MCMs to be manufactured at the advanced development and manufacturing Technology Center of Excellence (TCE). Activities will support technology transfer and process optimization.			
Title: 2) MCMI	-	-	11.050
FY 2012 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate and maintain a process development laboratory. Benchmark process laboratory activities in various stages of development for expression platforms. Initiate and maintain a pilot plant capable of performing scale-up studies and manufacture of bulk products for early stage clinical trials or bridging studies.			
Title: 3) MCMI ***FY 2012 Plans:*** Initiate evaluation of candidate manufacturing platform processes to be transitioned to the TCE.	-	-	2.763
Title: 4) NGDS Increment 2 ***FY 2012 Plans:*** Initiate evaluation of prototype systems transitioned from the Joint Science and Technology Office (JSTO).	-	-	0.439
Title: 5) NGDS Increment 2 ***FY 2012 Plans:*** Initiate a market survey for the integration of Increment 2 capabilities.	-	-	0.310
Title: 6) NGDS Increment 2 ***FY 2012 Plans:*** Initiate Other Test Agencies (OTA) and Director, Office of Test and Evaluation support.	-	-	0.250
Title: 7) TMT/EID FLU ***Description:*** Transformational Medical Technologies (TMT)/Emerging Infectious Diseases (EID) - Upon Milestone A approval (planned for 2Q FY11), TMT will advance experimental broad-spectrum drug candidates with an Investigational New Drug (IND) application accepted by the Food and Drug Administration (FDA) through the Technology Development (TD) phase. In order to advance drug candidates, TMT will complete Phase I clinical studies, where drug candidates are introduced into humans and early evidence is gathered on drug safety. TMT will conclude the TD Phase by completing all activities associated with Phase 2 clinical studies where drug candidates are evaluated for efficacy. The results of the TD Phase clinical studies will support a Milestone B decision to continue toward a New Drug Application (NDA) and FDA approval/licensure. ***FY 2012 Plans:*** Conduct clinical trials for drug candidates that have achieved IND status for prophylaxis or treatment against influenza and conduct additional TD Phase activities as identified in the IND filing and by the FDA.	-	-	13.728
Title: 8) TMT/HFV	-	-	33.494

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Transformational Medical Technologies (TMT) Program/Hemorrhagic Fever Virus (HFV) - TMT will advance broad-spectrum or platform-based MCM candidates against viruses such as Ebola, Marburg and Junin through the Technology Development phase. TMT will complete preclinical evaluation to achieve IND status (as necessary) and initiate and complete Phase I clinical studies where drug candidates are introduced into humans and early evidence is gathered on drug safety. TMT will conclude the TD Phase by completing all activities associated with Phase 1 clinical studies. The results of the TD Phase clinical studies will support a Milestone B decision to continue toward a New Drug Application (NDA) and FDA approval/licensure. ***FY 2012 Plans:*** Complete Phase 1 clinical trials for three existing platform-based Medical Countermeasure (MCM) candidates. As attrition is high throughout the drug development process and less than 10% of compounds initiated during S&T activities actually become an approved drug, TMT will replenish the MCM candidate advanced development pipeline as appropriate. Continue to refine animal models in preparation for pivotal animal efficacy studies. Conduct additional TD Phase activities as identified by the FDA. Obtain Milestone B decision approval.			
Title: 9) TMT/IBP ***Description:*** Transformational Medical Technologies (TMT)/Intracellular Bacterial Pathogens (IBPs) - Upon Milestone A approval, TMT will advance experimental broad-spectrum drug candidates against bacterial diseases such as anthrax and plague through the Technology Development phase. TMT will initiate and complete Phase I clinical studies, where drug candidates are introduced into humans and early evidence is gathered on drug safety. TMT will conclude the TD Phase by completing all activities associated with Phase 2 clinical studies where drug candidates are evaluated for efficacy. The results of the TD Phase clinical studies will support a Milestone B decision to continue toward a New Drug Application (NDA) and FDA approval/licensure. ***FY 2012 Plans:*** Conduct preclinical and clinical trials as appropriate for drug candidates for post-exposure prophylaxis or treatment against IBPs and conduct additional TD Phase activities as identified by the FDA. Support the development of animal models required for pivotal animal efficacy studies to evaluate medical countermeasures currently in advanced development. Refine animal models to determine appropriate range of product doses, optimal route of administration and timing/schedule using data from Phase I clinical studies.	-	-	16.691
Title: 10) TMT/PLTFM ***Description:*** TMT/Platform Technologies: TMT will establish three functional areas to support MCM development and respond to a biological event: Pathogen Characterization - Identifies and/or characterizes genetically modified or emerging pathogens. Target Identification - identifies genes or pathways within the host or pathogen that are vulnerable to countermeasure intervention.	-	-	19.656

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Bioinformatics - provides databases, tools, processing power, and connectivity to enable response system interoperability. TMT will integrate the three functional areas. TMT will use exercises to competitively prototype the functional areas and identify remaining gaps and determine. the "best of breed' technology. The ultimate goal is to provide a time and cost-effective response to an unknown, genetically modified or emerging pathogen threat. ***FY 2012 Plans:*** Continue maturation of pathogen characterization functional area, focusing on integration and timeline reduction. Continue maturation of bioinformatics functional area, focusing on integration and incorporation of additional functionality. Plan and execute two exercises to evaluate the integration of functional areas.			
Title: 11) TMTI ***Description:*** Multiagent Broad Spectrum Medical Countermeasures - This effort will advance experimental broad-spectrum drug candidates at a Technology Readiness Level (TRL) 4 through the Technology Development phase. This includes further preclinical evaluation (as necessary) and initiation and completion of Phase I clinical studies, where a new drug is introduced into humans and early evidence is gathered on drug safety. Approved performers who have had their Investigational New Drug (IND) applications accepted by the Food and Drug Administration (FDA) will initiate Phase 1 clinical trials and other studies necessary to support a Milestone B decision and progress toward a New Drug Application (NDA) with the FDA. ***FY 2010 Accomplishments:*** Initiated preclinical evaluation for one TRL-4 platform-based candidate that showed promise against Ebola. Completed preclinical evaluation for two platform-based candidates that are IND status and showed promise against Ebola and Marburg, respectively. Supported the development of animal models required for pivotal animal efficacy studies to evaluate medical countermeasures currently in advanced development. Continued strategic and tactical planning, program/financial management, costing, contracting, scheduling, and technical direction and support. ***FY 2011 Plans:*** Continue to conduct Phase I clinical trials for the two platform-based candidates. Conduct additional research as required by the FDA prior to granting IND status or conduct Phase I clinical trials, as necessary, for the third platform-based candidate. Refine animal models to determine appropriate range of product doses, optimal route of administration and timing/schedule using data from Phase I clinical studies. Continue strategic and tactical planning, program/financial management, costing, contracting, scheduling, and technical direction and support.	82.921	98.593	-
Title: 12) TMTI	-	21.764	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Platform Technologies: Exercises will commence on the platform technologies and the bioinformatics system developed with science and technology funding to evaluate and determine the ability of these systems to support the capability goal of TMT. Platform technologies will continue to be refined, and final improvements will be made as needed. Platforms will be evaluated as stand-alone platforms to determine their capability in their respective area. Platforms providing a similar capability will be competed against each other to determine how each can best contribute to the response capability. The bioinformatics system will be evaluated for overall architecture, connectivity, processing capability, and user-friendliness. Lessons learned from each exercise will be analyzed and incorporated into future exercises. The ultimate goal is to improve countermeasure efficacy and to shorten the time required to produce an approved countermeasure for an unknown or genetically modified pathogen. ***FY 2011 Plans:*** Begin to develop and refine platforms to advance TMT capability needs, particularly in the pathogen characterization and bioinformatics areas. Plan and execute up to two exercises and evaluations. Collect and analyze data with the goal of improving the performance of the individual platforms. Exercise the integrated rapid response capabilities to incorporate enhanced functionality, establish standardized processes and procedures and identify areas for improvement with the goal of increasing system effectiveness and reducing overall system execution timeline.			
Title: 13) JVAP - Filovirus Vaccine ***FY 2010 Accomplishments:*** Prepared supporting acquisition documentation, conducted Milestone A, and entered into the Technology Development Phase. Prepared Resource Allocation Decision Plan (RADP) and selected single vaccine candidate for further development.	0.400	-	-
Title: 14) JVAP - Filovirus Vaccine ***FY 2010 Accomplishments:*** Initiated non-clinical studies through Interagency Agreements. Initiated procedures for safeguarding biological select agents and toxins. ***FY 2011 Plans:*** Continue non-clinical studies through Interagency Agreements. Continue procedures for safeguarding biological select agents and toxins. ***FY 2012 Plans:*** Continue non-clinical studies through Interagency Agreements. Continue procedures for safeguarding biological select agents and toxins.	9.143	3.858	10.374
Title: 15) JVAP - Filovirus Vaccine	-	10.600	11.482

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2011 Plans: Initiate small-scale manufacturing process development. ***FY 2012 Plans:*** Continue small-scale manufacturing process development.			
Title: 16) VAC FILO ***FY 2010 Accomplishments:*** Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:*** Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2012 Plans:*** Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	1.426	2.160	3.147
Title: 17) VAC FILO ***FY 2012 Plans:*** Plan and conduct pre-Investigational New Drug application meeting.	-	-	0.500
Accomplishments/Planned Programs Subtotals	93.890	136.975	137.653

	FY 2010	FY 2011
Congressional Add: 1) Broad Spectrum Therapeutic Countermeasure	1.593	-
FY 2010 Accomplishments: Congressional Interest Item - Broad Spectrum Therapeutic Countermeasure to Organophosphorous Nerve Agents. Initiated development of a broad-spectrum therapeutic capable of protecting both the central and peripheral nervous systems from injury by nerve agents and reducing reliance on pretreatments.		
Congressional Adds Subtotals	1.593	-

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JM0001: *JOINT BIO AGENT IDENT AND DIAG SYSTEM (JBAIDS)*	0.000	5.571	0.000		0.000	0.000	0.000	0.000	0.000	0.000	5.571
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT*	12.701	12.824	0.180		0.180	4.425	4.425	28.539	25.744	Continuing	Continuing
• JX0210: *CRITICAL REAGENTS PROGRAM (CRP)*	0.000	0.994	0.998		0.998	0.999	0.998	0.997	0.991	Continuing	Continuing
• MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	57.563	141.680	272.345		272.345	259.039	354.900	331.308	310.104	Continuing	Continuing
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	0.000	0.000	5.448		5.448	0.492	0.493	8.851	15.459	Continuing	Continuing

D. Acquisition Strategy

MCMI

MCM products will be developed by the private sector, academia and the government and transitioned to the Technical Center of Excellence (TCE) for manufacture as product maturity aligns with readiness of the facility and its operating structure. Rights to Intellectual Property will be required for subsequent advanced development and manufacturing (Government Purpose Rights). The Government intends to partner with multiple private companies and educational institutions. The TCE establishment will be formalized by competitively entering into an agreement under Other Transaction Authority (OTA) that is expected to allow the sharing of costs to meet objectives, and provide the availability of excess capacity. Innovative incentive provisions and cost sharing arrangements will be explored via interaction with industry through a Request For Information (RFI), industry day(s) and a Draft Request For Proposal (RFP) prior to release of the final solicitation.

NGDS

The Next Generation Diagnostic System (NGDS) is an incremental, evolutionary development program. Increment 1 will be a rapid fielding effort to deliver the best Commercial Off-the-Shelf (COTS) capability to identify traditional, enhanced, emerging and advanced threats. NGDS Increment 1 development will focus on planning, performance, process, and innovative solutions (P3I) improvements to the fielded COTS device, to include new assays hosted on the NGDS fielded COTS platform. The strategy also includes NGDS Increment I connectivity to aspects of the DoD's Global Information Grid, and DoD's medical health care data base systems (e.g., Joint Warning and Reporting Network, Medical Situational Awareness in Theater, Armed Forces Health Longitudinal Technology Application, etc.) From a revolutionary standpoint, NGDS will annually evaluate new technologies in the diagnostic device area (e.g. Portable Sequencers, Pre-Symptomatic Markers, Metagenomics, etc.) starting in late FY12 through FY16. Increment 2 is planned to be a new diagnostics device that compliments the technology in Increment 1. NGDS Increment 2 will

enter into separate Milestones from Increment 1 and will integrate into Increment 1 based on the assessed maturity. The NGDS Increment 2 Milestone A will start in 2QFY12 and run for 24-36 months.

TMT/EID FLU

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMT/HFV

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMT/IBP

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMT/PLTFM

The Transformational Medical Technologies (TMT) Program will incrementally develop and integrate pathogen characterization, target identification and bioinformatics functional areas. In order to create this DoD-inherent capability, TMT will invest in USG labs to buy equipment, train personnel and establish pathogen characterization/ identification and bioinformatics capabilities. Through the USG labs, TMT will leverage capabilities of USG agencies, academia and industry to mature/refine DoD processes and train personnel.

TMTI

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The Transformational Medical Technologies Initiative (TMTI) will advance Multiagent Broad Spectrum Medical Countermeasures (MCM), or MCM candidates based on an adaptable discovery platform, at a Technology Readiness Level (TRL) 4 through the Technology Development phase. TMTI will also conduct exercises on the platform technologies and the bioinformatics system developed with science and technology funding to evaluate and determine the ability of these systems to support the TMT capability goal. Beginning in FY12 TMT will separate into four product lines. This separation will provide greater program control and granularity. Separate program lines are: Hemorrhagic Fever Virus (HFV) Medical Countermeasures (MCMs) (e.g. Ebola virus), Intracellular Bacterial Pathogen (IBP) MCMs (e.g. Tularemia), Emerging Infectious Disease (EID) MCMs (e.g. H1N1 Influenza), and Platform Technologies.

Note - In FY10 TMTI was officially redesignated the Transformational Medical Technologies (TMT) Program.

VAC FILO

The mission of the Chemical Biological Medical Systems (CBMS) - Joint Vaccine Acquisition Program (JVAP) is to develop, produce, and stockpile FDA licensed vaccine products to protect the Warfighter against biological warfare agents. The Filovirus Vaccine program was initiated in FY10 with the ultimate goal to deliver a single trivalent vaccine to protect the Warfighter against exposure to Ebola viruses and Marburg viruses. JVAP will serve as the integrator for the Technology Development Phase by managing and coordinating the various vaccine development contracts and intergovernmental efforts from Milestone (MS) A to MS B. The development contracts will be a mix of Cost Plus and Firmed Fix Priced. JVAP will leverage similar contract efforts with the Department of Health and Human Services to satisfy the intent of the requirement and reduce risk. JVAP anticipates that the FDA will approve this product using the Animal Rule, which allows for demonstrating of efficacy in relevant animal model(s).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** MCMI - HW S - Tech Dev Manufacturing Platforms	C/CPFF	TBD:	-	-		27.582	Feb 2012	-		27.582	Continuing	Continuing	0.000
** TMT/EID FLU - SW SB - EID MCM Development Contract #1	C/CPIF	TBD:	-	-		6.364	Nov 2011	-		6.364	Continuing	Continuing	0.000
SW SB - EID MCM Development Contract #2	C/CPIF	TBD:	-	-		6.364	Nov 2011	-		6.364	Continuing	Continuing	0.000
** TMT/HFV - SW SB - FDA Licensure of SNALP Platform-based Medical Countermeasure (MCM) Products for Ebola	C/CPIF	Tekmira:Vancouver, Canada (Contract Option)	-	-		4.900	May 2012	-		4.900	Continuing	Continuing	0.000
SW SB - FDA Licensure of PMO Platform-based Medical Countermeasure (MCM) Products for Ebola and Marburg	C/CPIF	AVI BioPharma (Marburg):Corvallis, OR (Contract Option)	-	-		11.060	May 2012	-		11.060	Continuing	Continuing	0.000
SW S - Animal Modeling Support	MIPR	USAMRIID:Frederick, MD	-	-		5.305	May 2012	-		5.305	Continuing	Continuing	0.000
** TMT/IBP - SW SB - MCM Development Contract #1	C/CPIF	TBD:	-	-		3.882	Aug 2012	-		3.882	Continuing	Continuing	0.000
SW SB - MCM Development Contract #2	C/CPIF	TBD:	-	-		3.882	Aug 2012	-		3.882	Continuing	Continuing	0.000
SW S - MCM Development Contract #3	C/CPIF	TBD:	-	-		3.882	Aug 2012	-		3.882	Continuing	Continuing	0.000
SW S - MCM Development Contract #4	C/CPIF	TBD:	-	-		3.882	Aug 2012	-		3.882	Continuing	Continuing	0.000
** TMT/PLTFM - SW SB - Platform Technology - Bioinformatics	MIPR	ECBC:Edgewood, MD	-	-		9.164	Feb 2012	-		9.164	Continuing	Continuing	0.000
SW S - Platform Technology - Pathogen Characterization	MIPR	USAMRIID:Frederick, MD	-	-		9.164	Feb 2012	-		9.164	Continuing	Continuing	0.000
	C/CPIF		9.755	19.331	May 2011	-		-		-	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TMTI - SW SB - FDA Licensure of Medical Countermeasure (MCM) Products		Tekmira - Vancouver:Canada											
SW SB - FDA Licensure of Medical Countermeasure (MCM) Products	C/CPIF	AVI BioPharma - Corvallis:OR	26.441	53.955	May 2011	-		-		-	Continuing	Continuing	0.000
SW SB - Animal Model Development	MIPR	USAMRIID:Frederick, MD	6.987	5.313	May 2011	-		-		-	Continuing	Continuing	0.000
SW SB - Therapeutic Validation Contract #1	C/CPIF	TBD:	5.705	5.764	Aug 2011	-		-		-	Continuing	Continuing	0.000
HW SB - Therapeutic Validation Contract #2	C/CPIF	TBD:	-	7.381	May 2011	-		-		-	Continuing	Continuing	0.000
HW SB - Therapeutic Validation Contract #3	C/CPIF	TBD:	-	8.583	May 2011	-		-		-	Continuing	Continuing	0.000
** VAC FILO - HW S - Manufacturing, Validation, Pilot Lot, and Consistency Lot Production	C/CPIF	TBD:	-	2.442	Feb 2011	4.711	Feb 2012	-		4.711	Continuing	Continuing	0.000
HW S - Non Clinical Studies	MIPR	USAMRIID:Fort Detrick, MD	9.034	2.250	Feb 2011	3.000	Feb 2012	-		3.000	Continuing	Continuing	0.000
		Subtotal	57.922	105.019		103.142		-		103.142			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGDS - ES S - Analysis of Alternatives	C/CPFF	TBD:	-	-		0.250	Feb 2012	-		0.250	0.000	0.250	0.000
** TMT/HFV - TD/D SB - TMT Advanced Development Support	C/FFP	Booz Allen & Hamilton:McLean, VA	-	-		10.140	May 2012	-		10.140	0.000	10.140	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TMTI - TD/D SB - Acquisition, Program and Financial Management Support	C/FFP	Booz-Allen & Hamilton - McLean:VA	9.477	9.800	May 2011	-		-		-	0.000	19.277	0.000
** VAC FILO - ES S - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPIF	TBD:	-	2.745	Feb 2011	3.294	Feb 2012	-		3.294	0.000	6.039	0.000
		Subtotal	9.477	12.545		13.684		-		13.684	0.000	35.706	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGDS - DTE S - Evaluation of Increment 2 prototypes	MIPR	USAMRIID:Fort Detrick, MD	-	-		0.349	Feb 2012	-		0.349	0.000	0.349	0.000
** VAC FILO - DTE S - Testing, Evaluation, and Clinical Trials	C/CPIF	TBD:	-	5.943	Feb 2011	8.765	Feb 2012	-		8.765	0.000	14.708	0.000
		Subtotal	-	5.943		9.114		-		9.114	0.000	15.057	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGDS - PM/MS S - Product Management Support	MIPR	RDECOM:APG, MD	-	-		0.150	Nov 2011	-		0.150	0.000	0.150	0.000
PM/MS S - Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	-	-		0.250	Feb 2012	-		0.250	0.000	0.250	0.000
** TMT/EID FLU - PM/MS S - JPEO Management Support	MIPR	JPEOCBD:Falls Church, VA	-	-		1.000	Aug 2012	-		1.000	0.000	1.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TMT/HFV - PM/MS S - Project Management, JPEO MGMT	MIPR	JPEOCBD:Falls Church, VA	-	-		2.089	Aug 2012	-		2.089	0.000	2.089	0.000
** TMT/IBP - PM/MS SB - Program Management, JPEO	MIPR	JPEO:Falls Church, VA	-	-		1.163	Aug 2012	-		1.163	0.000	1.163	0.000
** TMT/PLTFM - PM/MS S - Program Management, JPEO	MIPR	JPEO:Falls Church, VA	-	-		1.328	Aug 2012	-		1.328	0.000	1.328	0.000
** TMTI - PM/MS S - Project Management, JPEO MGMT	MIPR	JPEOCBD:Falls Church, VA	24.556	10.230	Aug 2010	-		-		-	0.000	34.786	0.000
** VAC FILO - PM/MS S - Program Management/ Program Manager Support	Allot	CBMS:Frederick, MD	0.145	1.004	Aug 2011	1.806	Aug 2012	-		1.806	0.000	2.955	0.000
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven:LLC, Frederick	1.440	0.720	Nov 2010	1.400	Feb 2012	-		1.400	0.000	3.560	0.000
PM/MS - Joint Vaccine Acquisition Program Management	Allot	CBMS:Frederick, MD	0.350	0.664	Feb 2011	1.023	Feb 2012	-		1.023	0.000	2.037	0.000
PM/MS C - PM/MS S- Program Management Program Manager Support	Allot	JPEO:Falls Church, VA	-	0.850	Feb 2011	1.504	Feb 2012	-		1.504	0.000	2.354	0.000
		Subtotal	26.491	13.468		11.713		-		11.713	0.000	51.672	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	93.890	136.975		137.653		-		137.653			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

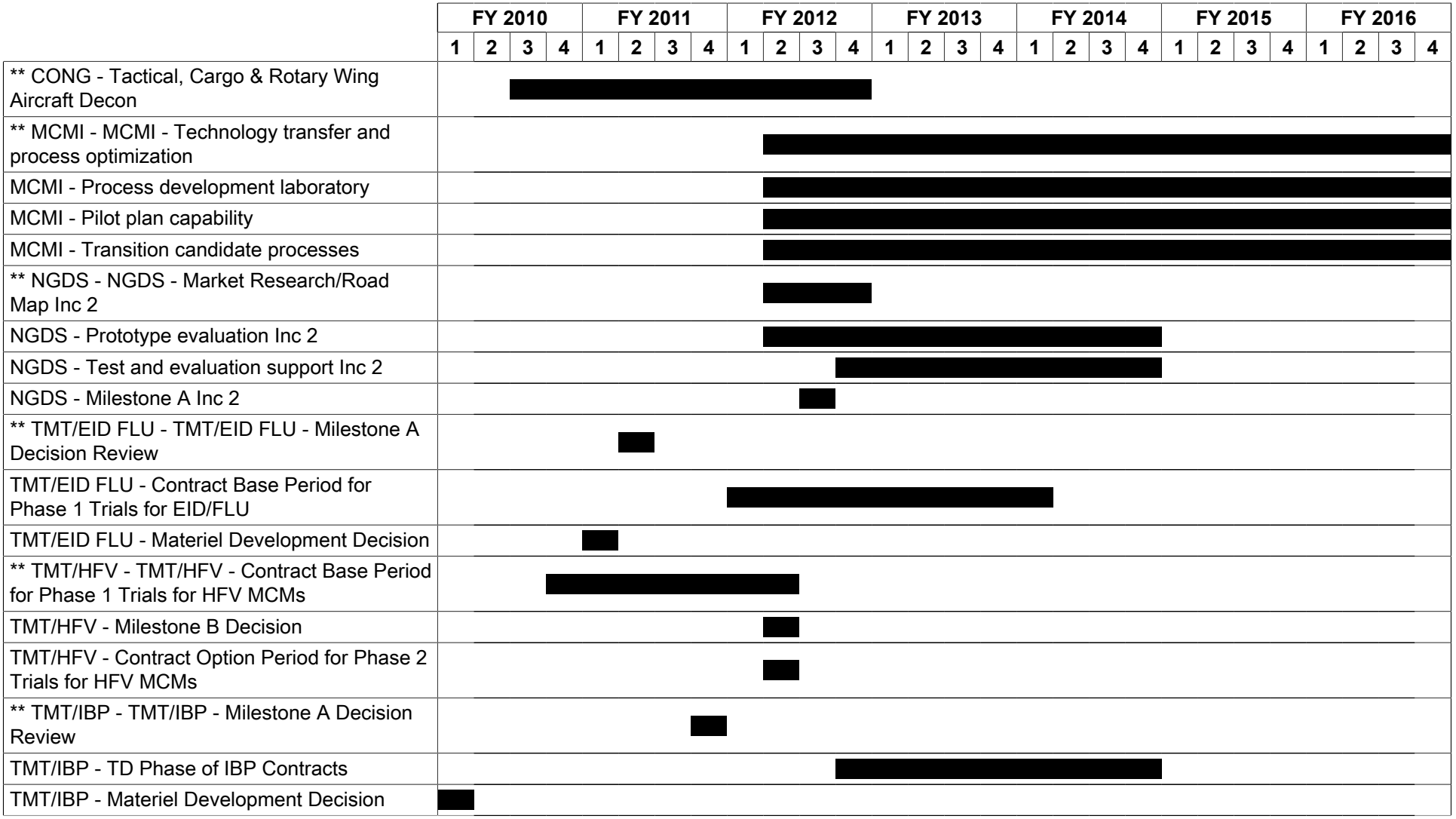

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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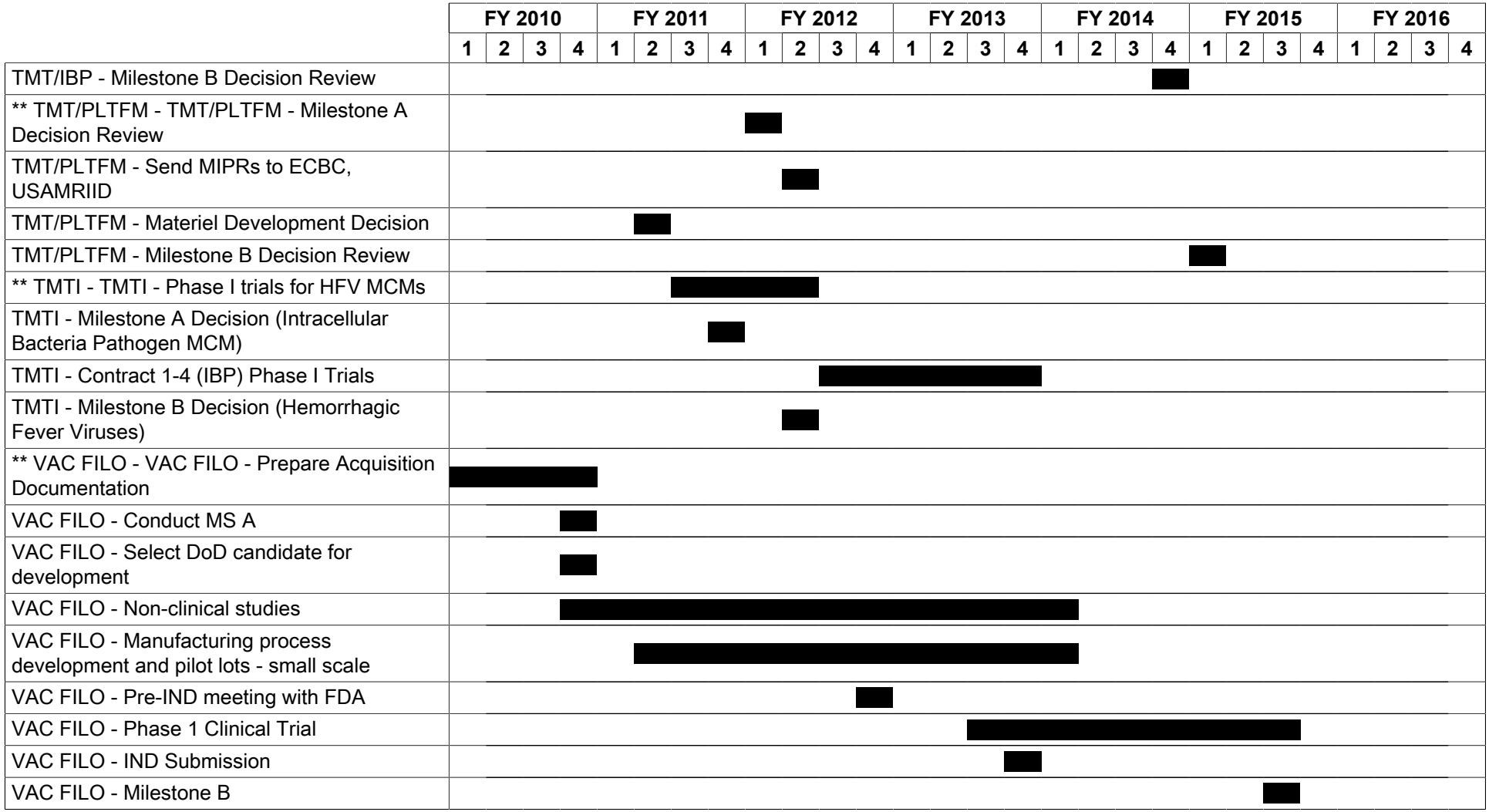

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CONG - Tactical, Cargo & Rotary Wing Aircraft Decon	3	2010	4	2012
** MCMI - MCMI - Technology transfer and process optimization	2	2012	4	2016
MCMI - Process development laboratory	2	2012	4	2016
MCMI - Pilot plan capability	2	2012	4	2016
MCMI - Transition candidate processes	2	2012	4	2016
** NGDS - NGDS - Market Research/Road Map Inc 2	2	2012	4	2012
NGDS - Prototype evaluation Inc 2	2	2012	4	2014
NGDS - Test and evaluation support Inc 2	4	2012	4	2014
NGDS - Milestone A Inc 2	3	2012	3	2012
** TMT/EID FLU - TMT/EID FLU - Milestone A Decision Review	2	2011	2	2011
TMT/EID FLU - Contract Base Period for Phase 1 Trials for EID/FLU	1	2012	1	2014
TMT/EID FLU - Materiel Development Decision	1	2011	1	2011
** TMT/HFV - TMT/HFV - Contract Base Period for Phase 1 Trials for HFV MCMs	4	2010	2	2012
TMT/HFV - Milestone B Decision	2	2012	2	2012
TMT/HFV - Contract Option Period for Phase 2 Trials for HFV MCMs	2	2012	2	2012
** TMT/IBP - TMT/IBP - Milestone A Decision Review	4	2011	4	2011
TMT/IBP - TD Phase of IBP Contracts	4	2012	4	2014
TMT/IBP - Materiel Development Decision	1	2010	1	2010
TMT/IBP - Milestone B Decision Review	4	2014	4	2014
** TMT/PLTFM - TMT/PLTFM - Milestone A Decision Review	1	2012	1	2012
TMT/PLTFM - Send MIPRs to ECBC, USAMRIID	2	2012	2	2012
TMT/PLTFM - Materiel Development Decision	2	2011	2	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TMT/PLTFM - Milestone B Decision Review	1	2015	1	2015
** TMTI - TMTI - Phase I trials for HFV MCMs	3	2011	2	2012
TMTI - Milestone A Decision (Intracellular Bacteria Pathogen MCM)	4	2011	4	2011
TMTI - Contract 1-4 (IBP) Phase I Trials	3	2012	4	2013
TMTI - Milestone B Decision (Hemorrhagic Fever Viruses)	2	2012	2	2012
** VAC FILO - VAC FILO - Prepare Acquisition Documentation	1	2010	4	2010
VAC FILO - Conduct MS A	4	2010	4	2010
VAC FILO - Select DoD candidate for development	4	2010	4	2010
VAC FILO - Non-clinical studies	4	2010	1	2014
VAC FILO - Manufacturing process development and pilot lots - small scale	2	2011	1	2014
VAC FILO - Pre-IND meeting with FDA	4	2012	4	2012
VAC FILO - Phase 1 Clinical Trial	3	2013	3	2015
VAC FILO - IND Submission	4	2013	4	2013
VAC FILO - Milestone B	3	2015	3	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MC4: *MEDICAL CHEMICAL DEFENSE (ACD&P)*	20.518	-	20.804	-	20.804	3.658	5.045	14.716	3.555	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project provides for the development of medical materiel and other medical equipment items necessary to Technology Development phase of the acquisition life cycle for the advanced development of medical countermeasures for chemical agents including diagnostic equipment; prophylactic, pre-treatment, and therapeutic drugs; and individual/casualty decontamination compounds. A system-of-systems approach for medical defense against chemical 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. Multiple long-term studies are required to obtain FDA approval resulting in longer program timelines treatment for nerve agent intoxication to include new indications for Pyridostigmine Bromide (PB) that will be integrated with current 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) Centrally Acting Nerve Agent Treatment System (CANATS), an augmentation to current capability, to treat adverse effects occurring in the central nervous system following nerve agent intoxication and will provide protection against neurological damage, especially brain damage; (3) Inhalation Atropine (IA), an improvement to existing capability leveraging novel delivery, to be used to treat mild to moderate continuing nerve agent induced effects after the patient has been evacuated to a medical treatment facility; and (4) Improved Nerve Agent Treatment System (INATS), a replacement and improvement to existing capability, to be used as a treatment for nerve agent intoxication; the INATS effort also includes expanding the indications for Pyridostigmine Bromide (PB) that will be integrated with current therapeutic regimens.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) BSCAV Increment 2 ***FY 2010 Accomplishments:*** Initiated analysis of alternative manufacturing technologies to support delivery of a capability for full force.	1.800	-	-
Title: 2) BSCAV Increment 2 ***FY 2010 Accomplishments:*** Continued lot release assay development and qualification.	1.037	-	-
Title: 3) BSCAV Increment 2 ***FY 2010 Accomplishments:***	3.300	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Completed production of source material for bulk drug substance.			
Title: 4) BSCAV Increment 2 ***FY 2010 Accomplishments:*** Completed manufacturing and process qualification at small scale.	5.061	-	-
Title: 5) CANATS ***FY 2012 Plans:*** Initiate pre-clinical safety/toxicology studies.	-	-	2.966
Title: 6) Inhalation Atropine ***Description:*** NTA ***FY 2010 Accomplishments:*** Initiated process development and cGMP requirements (NTA).	0.800	-	-
Title: 7) Inhalation Atropine ***Description:*** NTA ***FY 2010 Accomplishments:*** Initiated formulation, analytical methods and device optimization (NTA).	1.167	-	-
Title: 8) INATS ***FY 2010 Accomplishments:*** Initiated and completed Investigational New Drug (IND) amendment (NTA).	0.500	-	-
Title: 9) INATS ***FY 2012 Plans:*** Continue Phase 1 Clinical Trial.	-	-	4.940
Title: 10) INATS ***FY 2010 Accomplishments:*** Completed safety and toxicology studies of candidate oximes; completed preliminary efficacy studies of traditional agents.	2.353	-	-
Title: 11) INATS ***FY 2012 Plans:***	-	-	6.040

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue testing of candidate oxime against non-traditional agents (NTA).			
Title: 12) INATS	4.500	-	6.858
FY 2010 Accomplishments: Initiated process development and Chemistry Manufacturing and Controls (CMC) efforts of enhanced formulation to support clinical trials (NTA).			
FY 2012 Plans: Complete process development and Chemistry Manufacturing and Controls (CMC) efforts of enhanced formulation to support clinical trials.			
Accomplishments/Planned Programs Subtotals	20.518	-	20.804

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JM6500: *INHALATIONAL ATROPINE (IA)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• JM6555: *IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	0.000	0.000		0.000	4.411	8.836	0.000	0.000	0.000	13.247
• MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*	4.126	51.856	26.407		26.407	18.860	18.396	20.824	27.289	Continuing	Continuing

D. Acquisition Strategy

BSCAV

Bioscavenger acquisition strategy uses a serial evaluation of candidates to achieve competitive prototyping in Technology Development. Initially, the Medical Identification and Treatment Systems (MITS) Joint Product Management Office (JPMO) exercised management oversight and a commercial partner as the system integrator during the Technology Development to examine a human plasma-derived butyrylcholinesterase (i.e. pBioscavenger). Activities included small scale manufacturing, conduct of pre-clinical animal safety studies, submission of an Investigational New Drug (IND) application, and completion of a Phase 1 human clinical safety study. Subsequently, the MITS JPMO evaluated a recombinant butyrylcholinesterase expressed in goat milk (i.e., rBioscavenger) and multiple small molecule

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candidates. The small molecule candidates were not pursued beyond initial toxicology/safety testing in animals. For rBioscavenger, activities included small scale manufacturing, conduct of pre-clinical animal safety studies, submission of an IND application, completion of a Phase 1 human clinical safety study and conduct of preliminary animal efficacy studies.

The path forward will include a formal Request For Proposal to select the Best Value for the government for a prophylaxis to support an initial limited user group requirement. Concurrently the MITS JPMO will conduct an analysis of alternative manufacturing technologies. Subsequently, a full force solution prophylaxis will be pursued, once appropriate alternate manufacturing technologies have matured. Following a successful Milestone B and entry into Engineering and Manufacturing Development (EMD), the MITS JPMO 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. Prior to FDA licensure, the 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 EMD phase will culminate in FDA licensure of the Bioscavenger. During the Production and Deployment phase, the MITS JPMO, in conjunction with a commercial partner, will pursue full rate and stockpile production and conduct any FDA-mandated post-marketing surveillance studies.

CANATS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office (JPMO) will serve as the system integrator during the Technology Development Phase and conduct pre-clinical animal studies and Phase 1 human clinical safety studies with the centrally acting drug candidate(s) that will serve as adjunct therapy to the already available nerve agent treatment regimen. If multiple centrally acting candidates are transitioned from tech base, MITS JPMO will down-select when appropriate, but no later than Milestone B, and will determine the final configuration of the CANATS autoinjector prior to Milestone B. After Milestone B, during the Engineering and Manufacturing (EMD) Phase, the MITS JPMO and/or a commercial partner (product dependent) will serve as the system integrator to conduct Phase 2 human clinical safety, definitive animal efficacy and toxicology studies required for FDA approval. The system integrator will also develop and manufacture a product formulation and autoinjector delivery system that is stable under operationally relevant temperatures. The system integrator will seek FDA approval for the CANATS product during the EMD Phase. During the Production and Deployment Phase, and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance studies will be conducted during the Production and Deployment Phase.

IA

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office is managing the development of Inhalation Atropine for the Department of Defense (DoD). Inhalation Atropine is intended as a broad spectrum treatment of mild to moderate continuing symptoms of traditional nerve agent and non-traditional agent poisoning for patients within deployable and fixed medical treatment facilities. Utilizing the Chemical Biological Medical Systems Broad Agency Announcement, MITS will develop an Inhalation Atropine candidate to Technology Readiness Level 6. A contractor will serve as the product integrator and shall be responsible for conducting formulation / device optimization and feasibility demonstration activities associated with drug development in a manner consistent with Food and Drug Administration (FDA) regulations and guidelines. The DoD is coordinating with the Department of Health and Human Services (HHS) on the development of Inhalation Atropine capability in support of the Integrated National Biodefense Portfolio.

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INATS

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office (JPMO) will serve as the system integrator during the Technology Development Phase and conduct formulation development, pre-clinical animal studies and Phase 1 human clinical safety studies for the candidate oxime to replace 2-pralidoxime chloride in the Antidote Treatment Nerve Agent Autoinjector (ATNAA). After Milestone B, during the Engineering and Manufacturing (EMD) Phase, the MITS JPMO and/or a commercial partner (product dependent) will serve as the system integrator to conduct Phase 2 human clinical safety, definitive animal efficacy and toxicology studies required for FDA approval. The system integrator will also develop and manufacture a product formulation and autoinjector delivery system that is stable under operationally relevant temperatures. The system integrator will submit a New Drug Application and seek FDA approval for the INATS product during the EMD Phase. During the Production and Deployment Phase, and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance studies will be conducted during the Production and Deployment Phase.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CANATS - HW S - CANATS - Pre-clinical safety/toxicology studies	C/CPIF	TBD:	-	-		2.396	Feb 2012	-		2.396	Continuing	Continuing	0.000
** INATS - HW S - Phase 1 Clinical Trial	MIPR	Defense Technical Information Center:Edgewood, MD (Battelle)	-	-		2.995	Feb 2012	-		2.995	Continuing	Continuing	0.000
HW S - NTA Study	MIPR	Defense Technical Information Center:Edgewood, MD (Battelle)	-	-		6.087	Feb 2012	-		6.087	Continuing	Continuing	0.000
HW S - Enhanced Formulation Development	MIPR	Defense Technical Information Center:Edgewood, MD (Battelle)	3.865	-		4.355	Feb 2012	-		4.355	Continuing	Continuing	0.000
		Subtotal	3.865	-		15.833		-		15.833			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** INATS - ES S - INATS - Regulatory Integration, IND, and NDA Support Efforts	MIPR	Defense Technical Information Center:Edgewood, MD (Battelle)	1.528	-		0.998	Feb 2012	-		0.998	0.000	2.526	0.000
		Subtotal	1.528	-		0.998		-		0.998	0.000	2.526	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CANATS - PM/MS C - CANATS - Product Management Support	C/CPIF	USAMMDA:Fort Detrick, MD	-	-		0.150	Feb 2012	-		0.150	0.000	0.150	0.000
PM/MS C - CANATS - Management Support	Allot	CBMS:Frederick, MD	-	-		0.270	Feb 2012	-		0.270	0.000	0.270	0.000
PM/MS C - CANATS - Management Support #2	Allot	JPEO:Falls Church, VA	-	-		0.150	Feb 2012	-		0.150	0.000	0.150	0.000
** INATS - PM/MS S - INATS - Product Management Support	SS/FFP	Goldbelt Raven:LLC, Frederick	1.903	-		1.203	Feb 2012	-		1.203	0.000	3.106	0.000
PM/MS S - INATS - Product Management Support	MIPR	USAMMDA:Fort Detrick, MD	0.546	-		0.200	Feb 2012	-		0.200	0.000	0.746	0.000
PM/MS S - INATS - Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	0.938	-		1.000	Feb 2012	-		1.000	0.000	1.938	0.000
PM/MS S - INATS - Joint Program Executive Office	Allot	JPEO:Falls Church, VA	0.928	-		1.000	May 2012	-		1.000	0.000	1.928	0.000
		Subtotal	4.315	-		3.973		-		3.973	0.000	8.288	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.708	-		20.804		-		20.804			0.000

Remarks

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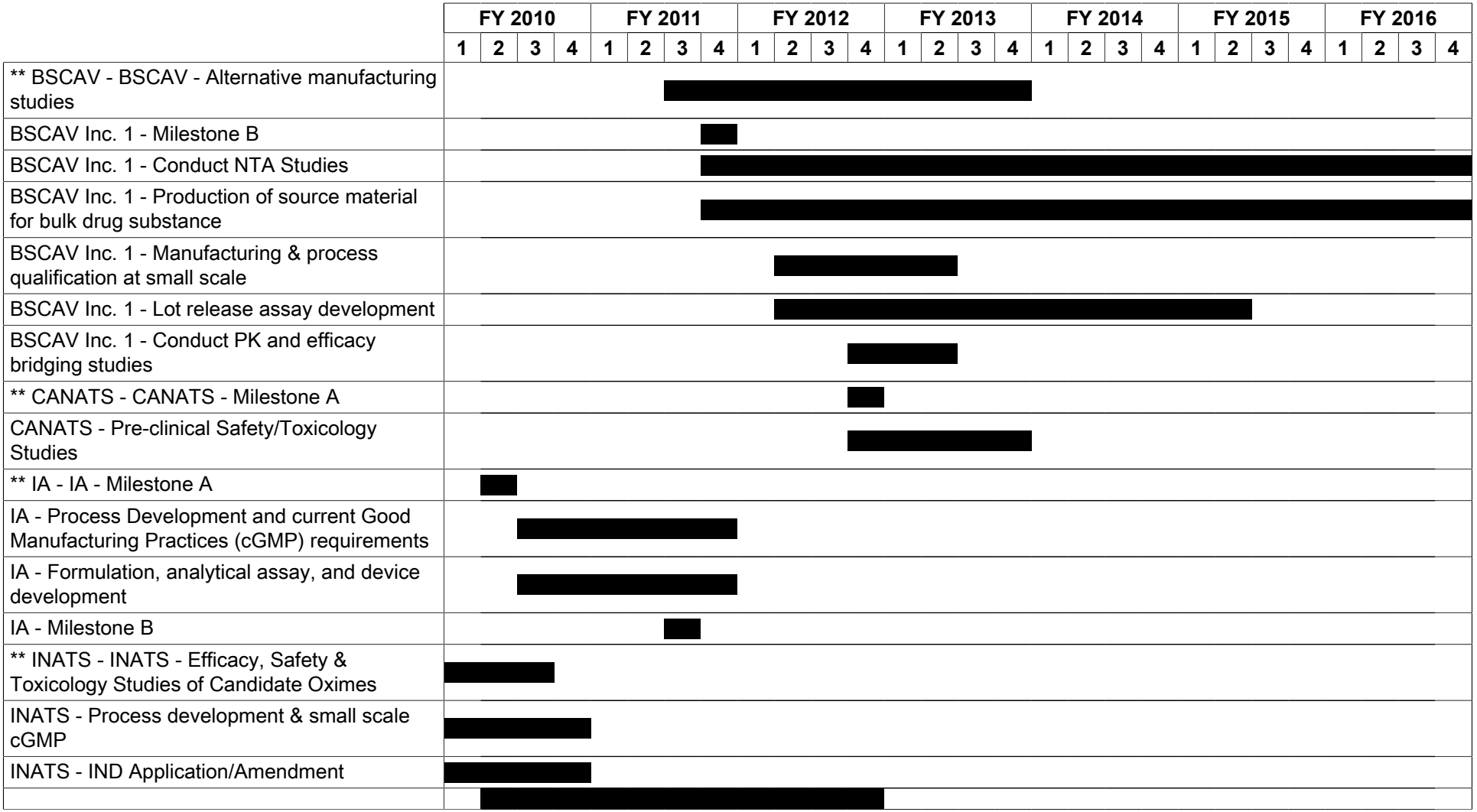

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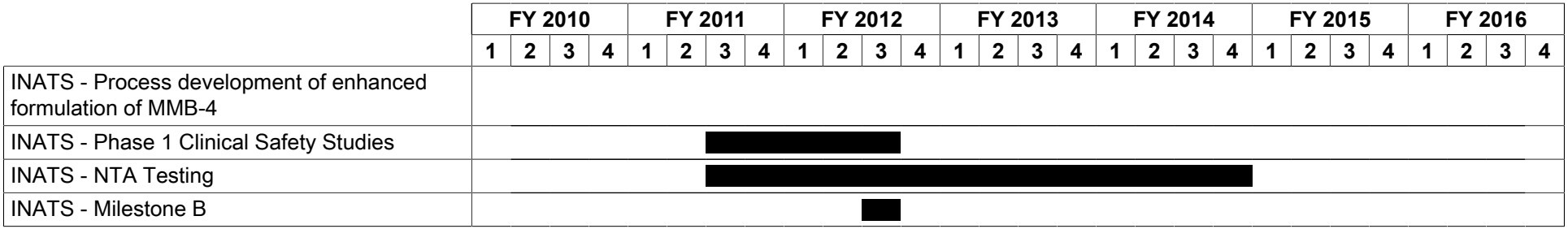

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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** BSCAV - BSCAV - Alternative manufacturing studies	3	2011	4	2013
BSCAV Inc. 1 - Milestone B	4	2011	4	2011
BSCAV Inc. 1 - Conduct NTA Studies	4	2011	4	2016
BSCAV Inc. 1 - Production of source material for bulk drug substance	4	2011	4	2016
BSCAV Inc. 1 - Manufacturing & process qualification at small scale	2	2012	2	2013
BSCAV Inc. 1 - Lot release assay development	2	2012	2	2015
BSCAV Inc. 1 - Conduct PK and efficacy bridging studies	4	2012	2	2013
** CANATS - CANATS - Milestone A	4	2012	4	2012
CANATS - Pre-clinical Safety/Toxicology Studies	4	2012	4	2013
** IA - IA - Milestone A	2	2010	2	2010
IA - Process Development and current Good Manufacturing Practices (cGMP) requirements	3	2010	4	2011
IA - Formulation, analytical assay, and device development	3	2010	4	2011
IA - Milestone B	3	2011	3	2011
** INATS - INATS - Efficacy, Safety & Toxicology Studies of Candidate Oximes	1	2010	3	2010
INATS - Process development & small scale cGMP	1	2010	4	2010
INATS - IND Application/Amendment	1	2010	4	2010
INATS - Process development of enhanced formulation of MMB-4	2	2010	4	2012
INATS - Phase 1 Clinical Safety Studies	3	2011	3	2012
INATS - NTA Testing	3	2011	4	2014
INATS - Milestone B	3	2012	3	2012

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*	2.800	-	-	-	-	-	-	-	-	0.000	2.800
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project funds the advanced development of candidate therapeutic medical countermeasures to mitigate the consequences of exposure to ionizing radiation from nuclear or radiological attacks. Exposure to ionizing radiation causes damage to blood-forming cells (hematopoietic system) and gastrointestinal system, leading to Acute Radiation Syndrome (ARS). Medical countermeasures must be approved by the Food and Drug Administration (FDA) for human use prior to fielding. Testing the efficacy of candidate drugs against lethal radiation exposure cannot be conducted in humans; therefore, surrogate animal models must be used to obtain FDA approval.

Medical Radiological Countermeasures (MRADC) efforts include multiple countermeasures required to protect U.S. Forces against injury caused by exposure to radiation and to restore casualties to pre-exposure health. MRADC shall reverse or limit radiation injury resulting in increased survival, decreased incapacity, and sustained operational effectiveness. In addition, MRADC shall be effective against a broad range of radiation sources and types and shall be useable throughout the full spectrum of healthcare operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) MRADC ***FY 2010 Accomplishments:*** Initiated pilot animal efficacy studies.	2.500	-	-
Title: 2) MRADC ***FY 2010 Accomplishments:*** Initiated documentation for Milestone B decision.	0.300	-	-
Accomplishments/Planned Programs Subtotals	2.800	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*	0.000	1.143	0.000		0.000	0.000	0.000	0.000	0.000	0.000	1.143

D. Acquisition Strategy

MRADC

Medical Identification and Treatment Systems (MITS) Joint Product Management Office is the life-cycle manager of Medical Radiation Countermeasures (MRADC) for the Department of Defense (DoD). The DoD is working very closely with the Department of Health and Human Services (HHS), which also has a radiation countermeasure program. 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 establishment of an interagency working group provides oversight and guidance to both agency programs and allows leveraging of knowledge and successes to advance the DoD MRADC program. Under the MOU, MITS executes Interagency Agreements with the Biomedical Advanced Research and Development Authority (BARDA), HHS' advanced developer, to promote the science of MRADC.

All MRADC will be developed using a system-of-systems approach to provide a full spectrum capability to protect against the radiation threat. Individual countermeasure solutions will be developed using a single step to a full capability (FDA approval) strategy. Multiple contractors will serve as individual product integrators throughout development and will be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA). Each contractor will sponsor the drug to the FDA and hold all approvals and/or licenses. The Technology Development phase includes pre-clinical studies and Phase 1 human clinical safety studies. During the Engineering and Manufacturing Development (EMD) phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the EMD phase. During the Production and Deployment Phase, sufficient quantities of product to meet Initial Operational Capability and Full Operational Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance studies requested by the FDA will be conducted.

E. Performance Metrics

N/A

Exhibit R-4, **RDT&E Schedule Profile:** PB 2012 Chemical and Biological Defense Program		**DATE:** February 2011
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)*	**PROJECT** MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*

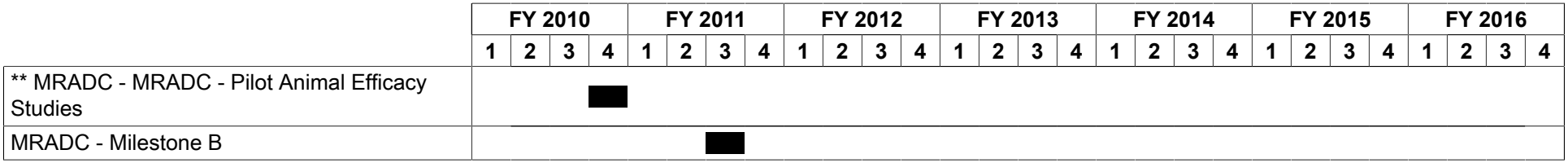

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** MR4: *MEDICAL RADIOLOGICAL DEFENSE (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** MRADC - MRADC - Pilot Animal Efficacy Studies	4	2010	4	2010
MRADC - Milestone B	3	2011	3	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TE4: *TEST & EVALUATION (ACD&P)*	28.412	19.304	5.438	-	5.438	16.232	12.461	18.369	19.296	Continuing	Continuing
Quantity of RDT&E Articles											

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 (NTA) Test System. The NTA System provides a new capability at the Edgewood Chemical Biological Center (ECBC) to conduct highly toxic materials testing using new, emerging threat agents. The NTA System supports testing of decontamination, collective protection, individual protection, and contamination avoidance products. The CBD acquisition program supported is the Joint Chemical Agent Detector (JCAD).

(2) Sense Laboratory (Biological): The product for this area is a biological live agent standoff chamber. The Chamber supports Joint Biological standoff detection testing in biological live agent environments. The CBD acquisition program supported is the Joint Biological Standoff Detection System (JBSDS) Increment 2.

(3) Individual Protection, Collective Protection and Decontamination (Shield and Sustain): The product for the area is an Individual Protection Ensemble Mannequin System (IPEMS), and Chemical Biological Agent Resistance Test Fixtures (CBART). IPEMS provides an articulated robotic mannequin that simulates Warfighters activities and includes under ensemble agent sensing capability for evaluating IPE against chemical warfare agents. IPEMS consists of an articulated robotic mannequin, exposure chamber, control room, and real time under-ensemble sensor system. CBART provides a state of the art material swatch test fixture for individual and collective protection system. The Acquisition Programs supported are: Joint Protective Aircrew Ensemble (JPACE); Joint Service General Purpose Mask (JSGPM); Joint Service Aircrew Mask (JSAM) - Fixed Wing (FW), Rotary Wing (RW), and Joint Strike Fighter (JSF) variants; Joint Service Chemical Environment Survivability Mask (JSCESM); Joint Chemical Ensemble (JCE); Uniform Individual Protective Ensemble (UIPE); Joint Service Lightweight Integrated Suit Technology (JSLIST); and Joint Chemical/Biological Coverall for Combat Vehicle Crewmen (JC3).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) PD TESS - Non-Traditional Agent (NTA) Test System	23.566	13.638	-
FY 2010 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiated design, fabrication and installation of the NTA Test System. Completed NTA simulant fixtures and environmentally controlled test fixtures for NTA testing. ***FY 2011 Plans:*** Continue facility fabrication.			
Title: 2) PD TESS - Bio Standoff Facility ***FY 2010 Accomplishments:*** Developed final design concepts for the Bio Standoff Facility. Initiated final specifications and drawings for Bio Standoff Facility. ***FY 2011 Plans:*** Initiate Bio Standoff Facility design. ***FY 2012 Plans:*** Continue design, fabrication and installation of the Bio Standoff Facility.	0.900	0.300	4.290
Title: 3) PD TESS - IPEMS ***FY 2010 Accomplishments:*** Completed mannequin chemical sensor repackaging, test, and evaluation.	0.726	-	-
Title: 4) PD TESS Chemical Biological Agent Resistance Test Fixture (CBART) ***FY 2012 Plans:*** Compile final specifications and drawings for the CBART test fixture.	-	-	0.500
Title: 5) PD TESS - Program Management ***FY 2010 Accomplishments:*** Continued Program Management, Engineering Support and Integrated Product Team (IPT) support. ***FY 2011 Plans:*** Continue Program Management, Engineering Support and IPT support. ***FY 2012 Plans:*** Continue Program Management, Engineering Support and IPT support.	3.220	5.366	0.648
Accomplishments/Planned Programs Subtotals	28.412	19.304	5.438

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TE4: *TEST & EVALUATION (ACD&P)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TE5: *TEST & EVALUATION (SDD)*	39.372	15.901	11.043		11.043	5.748	11.866	12.217	15.562	Continuing	Continuing
• TE7: *TEST & EVALUATION (OP SYS DEV)*	4.805	4.813	3.597		3.597	3.348	2.888	2.855	2.004	Continuing	Continuing

D. Acquisition Strategy

PD TESS

The PD TESS program provides for the development and acquisition of new and enhanced test infrastructure to support the sense, shield, shape, and sustain mission areas for the Chemical and Biological Defense Program (CBDP). The efforts are supported through competitive contract actions, academia, and other Government agencies. Infrastructure solutions will leverage commercially available systems to provide state-of-the-art capabilities that address current and future CBDP test and evaluation needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** PD TESS - HW S - NTA Test Facility Design/ Fabrication/Installation	C/CPFF	Midwest Research Institute:Kansas City Missouri	17.500	10.938	May 2011	-		-		-	Continuing	Continuing	0.000
HW S - NTA Test System Design/Fabrication/Installation	MIPR	Various:	6.066	2.700	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW S - Bio Standoff Facility Feasibility/Design	MIPR	Various:	2.400	0.300	Feb 2011	4.290	Feb 2012	-		4.290	Continuing	Continuing	0.000
SW SB - CBART - Design/ Fabrication	MIPR	Various:	-	-		0.500	Feb 2012	-		0.500	Continuing	Continuing	0.000
		Subtotal	25.966	13.938		4.790		-		4.790			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** PD TESS - PM/MS S - Management/Systems/ Engineering Support	MIPR	JPM NBC CA:APG, MD	3.020	5.366	Nov 2010	0.648	Nov 2011	-		0.648	0.000	9.034	0.000
		Subtotal	3.020	5.366		0.648		-		0.648	0.000	9.034	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	28.986	19.304		5.438		-		5.438			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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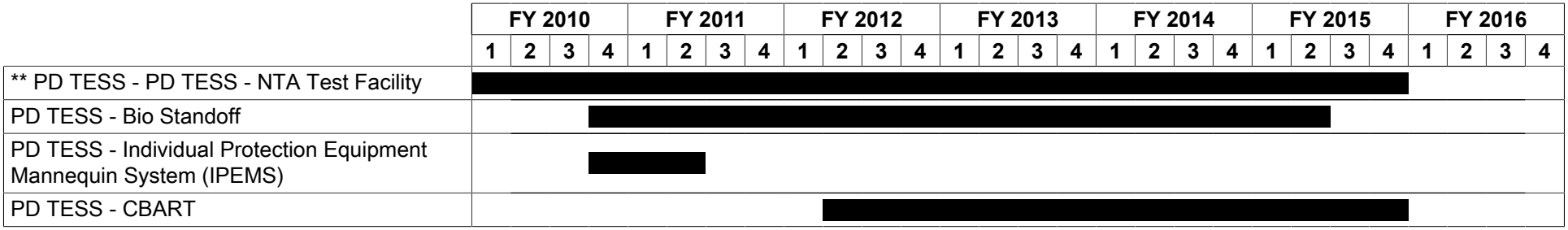

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** PD TESS - PD TESS - NTA Test Facility	1	2010	4	2015
PD TESS - Bio Standoff	4	2010	2	2015
PD TESS - Individual Protection Equipment Mannequin System (IPEMS)	4	2010	2	2011
PD TESS - CBART	2	2012	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*	24.937	26.466	3.022	-	3.022	3.923	4.758	8.467	9.075	Continuing	Continuing
Quantity of RDT&E Articles											

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 Advanced Technology Demonstrations (ATDs) and Joint Concept Technology Demonstrations (ACTDs) 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 four major thrust 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, Comprehensive Innovative Protection (CIP) and Interagency Countering Bio-threats Initiative (ICBI). The Hazard Mitigation thrust area 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 thrust area achieves 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. The CIP transitions mature technologies to improve individual and collective protection capabilities for U.S. and coalition Warfighters. The Interagency Countering Bio-threats Initiative is 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. The following is a description of specific efforts funded under each thrust area:

Hazard Mitigation:
Automated Detailed Equipment Decontamination for Land Vehicles (Auto Decon) - A chemical and biological decontamination process for land vehicles, which will prototype an improved decontamination process and will evaluate the current Detailed Equipment Decontamination (DED), which is the most thorough of Joint Service decontamination procedures. This effort will merge into the Decontamination Family of Systems, also known as HaMMER (see below for description).

Hazard Mitigation Material and Equipment Restoration (HaMMER) - A layered strategy to identify individual technologies that may be collectively applied to reduce or eliminate chemical and biological hazards. It includes a Decontamination Family of Systems that gives the Warfighter multiple capabilities to reduce or eliminate chemical hazards. This effort leverages upon and consolidates Auto Decon and SPIDER efforts described above.

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Early Warning:
Military Applications in Reconnaissance Systems for Joint Force Protection (MARS-JFP) - A data fusion ATD that leverages early warning technologies developed in Budget Activity 3 (Project TT3) to improve the capability to detect and react to an initial chemical and biological attack, as well as prevent a second attack. Specifically, this effort focuses on force protection decision making for external, cross domain sensors for cueing/tipping, and managing resources of dynamically deployable high quality chemical and biological sensors.

Rapid Area Surveillance Reconnaissance (RASR) - A sensitive-site exploration, standoff reconnaissance, ATD that leverages early warning technologies developed in Budget Activity 3 (Project TT3) to survey large areas (whole rooms, courtyards, fields) and assess and identify contamination with Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs) and Non-Traditional Agents (NTAs).

Post Intercept Weapons of Mass Destruction Identification (PIWID) - An ATD that leverages early warning technologies developed in Budget Activity 3 (Project TT3), which addresses both operational and technical issues associated with the capability to determine the presence of Weapons of Mass Destruction (WMD) in the threat payload of ballistic or cruise missile delivery systems after a successful active defense intercept.

Comprehensive Innovative Protection (CIP):
Demo-Low Burden Individual Protection Demonstration (IP Demo) - An ATD that leverages lightweight chemical and biological protective textiles developed in Budget Activity 3 (Project CB3, Protection and Hazard Mitigation), and will support the next generation Joint Chemical Ensemble. This effort will provide significantly decreased thermal burden correlated with acceptable levels of chemical and biological protection, as well as significantly increase the ability of the Warfighter to accomplish a mission in a contaminated environment.

Joint Medical Distance Support and Evaluation (JMDSE) - A Joint Concept Technology Demonstration (JCTD) that leverages the results of the EBD (see above for description) and seeks new detect-to-treat CONOPS enabled by the deployment of new chemical and biological detection and identification capabilities to front line forces.

Interagency Countering Bio-threats Initiative (ICBI):
Interagency Biological Restoration Demonstration (IBRD) - A Department of Defense (DoD)/Department of Homeland Security (DHS) collaborative effort that will provide a coordinated, systems approach to the recovery and restoration of wide urban areas. This will include Department of Defense (DoD) infrastructures and high traffic areas (transit/transportation facilities) following the aerosol release of a biological agent.

Transatlantic Collaborative Biological Resiliency Demonstration (TaCBRD) - A Department of Defense (DoD) managed effort in collaboration with Department of State and Department of Homeland Security (DHS). This collaborative effort that will provide a coordinated, systems approach to the response and recovery of a overseas partner nation with DoD assistance. This will include Department of Defense (DoD) infrastructures and high traffic areas.

Biosurveillance and Response ATD - An interagency ATD that will improve operational capability to detect, locate, characterize and attribute the use, or potential use, of biological agents. ATD will integrate whole-of-Government solutions to provide militarily useful Biosurveillance situation awareness. Timeliness and accuracy

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results will be correlated with militarily useful command and control responses, to include tasking of additional CBRN and non-CBRN/MASINT sensing assets. Effort will address pre-event deployment of syndromic surveillance assets, assessment of background/naturally existing hazards, exposure monitoring, and records and data analysis/fusion from all media and information sources. Effort will seamlessly integrate with whole-of-government threat genome identification and countermeasure response efforts coupled with quick reaction global military deployment capabilities to effectively contain and respond to a biological WMD attack.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) TT DEMO ***Description:*** ICBI (Interagency Biological Restoration Demonstration (IBRD)): ***FY 2010 Accomplishments:*** Completed IBRD development of restoration plans. Completed established risk assessment and clearance goals. Developed sampling, characterization, and long term monitoring plans. Developed and exercised wide-area decontamination methods. Developed and demonstrated restoration system tools and conduct table top exercises, field exercises, and workshops. Planned, coordinated, and executed the IBRD Final Demo/Table Top Exercise (TTX) in the Seattle urban area. Transitioned decontamination methods, restoration tools, agent fate and transport data to the advanced developer (Joint Program Manager for Guardian and Decontamination - see Budget Activities 4 and 5).	2.693	-	-
Title: 2) TT DEMO ***Description:*** ART (Automated Detailed Equipment Decontamination for Land Vehicles (Auto Decon)): ***FY 2010 Accomplishments:*** Completed baseline evaluation of current detailed equipment decontamination processes and prototype automated decontamination solutions. Recommended optimized process for automated decontamination. Transitioned detailed Process Evaluation Toolset (PET) to the advanced developer (Joint Program Manager for Decontamination - see Budget Activities 4 and 5).	1.773	-	-
Title: 3) TT DEMO ***Description:*** ART (Hazard Mitigation Material and Equipment Restoration (HaMMER)): ***FY 2010 Accomplishments:*** Conducted component decontamination processes in which collective applications can be employed to eliminate or reduce chemical and biological decontamination. ***FY 2011 Plans:*** Conduct and complete total system decontamination processes to ensure collective applications can be employed to eliminate or reduce chemical and biological decontamination. The completed project will define and provide a flexible system design that leverages individual technologies that address both hazard mitigation and dose-based risk assessment concepts. Transition	7.701	7.982	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
system of systems chemical/biological decontamination apparatus; Tactics, Techniques, and Procedures (TTPs); and CONOPS to JPM-Decontamination.			
Title: 4) TT DEMO ***Description:*** EW-MARS (Military Applications in Reconnaissance Systems for Joint Force Protection (MARS-JFP)): ***FY 2010 Accomplishments:*** Continued operational concept generation. Began software development, operational and mockup development, and developed test plans and procedures. Executed initial laboratory-based technology demonstration. ***FY 2011 Plans:*** Continue operational concept generation, software development, operational prototype and mockup development. Continue development of test plans and procedures. Initiate integration planning and testing for field demonstration.	2.924	3.336	-
Title: 5) TT DEMO ***Description:*** EW-MARS (Rapid Area Surveillance/Reconnaissance (RASR)): ***FY 2010 Accomplishments:*** Continued operational concept planning and exercises. Conducted pathfinder demonstrations to baseline current state of the art and determine critical path. Initiated competitive prototype industry awards and conduct technology readiness assessments. Initiated operational mockup, lesson plans and final development planning. ***FY 2011 Plans:*** Continue operational concept planning and exercise planning; technology readiness assessments; initiate operational mockup, lesson plans and final development planning; downselect prototype industry awards; conduct and finalize surety testing; conduct several technical and operational demonstrations; conduct Military Utility Assessment (MUA) to assess value to Warfighter; recondition complete systems in preparation for transition to operational managers and combat developers.	3.899	11.847	-
Title: 6) TT DEMO ***Description:*** EW-MARS Thrust Area (Post Intercept Weapons of Mass Destruction Identification (PIWID)): ***FY 2010 Accomplishments:*** Conducted post-intercept WMD simulant payload data collection while leveraging missile intercept event. Demonstrated sidecar re-processing of non-chemical and biological sensors to extract useful cue/tipping information. ***FY 2011 Plans:***	1.950	1.796	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Assess standoff data, chem/bio data, and current plan for Unmanned Aerial Vehicle (UAV) point-based, sensor approaches. Conduct standoff sensor and UAV CONOPS. Laboratory demonstration within cross domain environment. Transition data to JPM-NBC CA and JPM-BD.			
Title: 7) TT DEMO ***Description:*** CIP (Low Burden Individual Protection Demonstration (IP Demo)): ***FY 2010 Accomplishments:*** Performed and completed system level technical performance measure evaluations. Initiated and completed a system level user demonstration. Conducted and complete component level testing. Transitioned low burden individual protection overgarment to the advanced developer (Joint Program Manager for Individual Protection and the Program Manager for Soldier Equipment). Initiated risk reduction activities to demonstrate Catalytic Oxidation air purification prototypes, to include initial system and tank test bed designs.	3.022	-	-
Title: 8) TT DEMO ***Description:*** CIP (Joint Medical Distance Support and Evaluation (JMSDE)): ***FY 2010 Accomplishments:*** Completed JMDSE to Joint Biological Tactical Detection System (JBTDS) interface evaluation. Conducted field demonstrations and military utility assessments. Developed CONOPS, training, test and security plans. Initiated software development. ***FY 2011 Plans:*** Complete field demonstrations and military utility assessments; complete CONOPS and training, test, and security plans. Complete software development and integration. Transition to JPM-Bio Detection.	0.975	1.505	-
Title: 9) TT DEMO ***Description:*** (ICBI) Transatlantic Collaborative Biological Recovery Demonstration (TaCBRD) ***FY 2012 Plans:*** Initiate concept exploration and risk reduction efforts. Conduct baseline study to understand capability gaps associated with partner nation recovery and resilience in an overseas environment.	-	-	3.022
Accomplishments/Planned Programs Subtotals	24.937	26.466	3.022

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TE3: *TEST & EVALUATION (ATD)*	12.296	11.875	11.199		11.199	11.081	0.992	0.991	0.990	Continuing	Continuing
• TT3: *TECHBASE TECHNOLOGY TRANSITION*	7.381	4.504	0.000		0.000	0.000	0.000	0.000	0.000	0.000	11.885

D. Acquisition Strategy

TT DEMO

The Advanced Technology Demonstrations (ATDs) and Joint Concept Technology Demonstrations (JCTDs) exploit mature and maturing technologies to solve important military problems. ATDs and ACTDs 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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TT DEMO - HW C - (ART) HaMMER Product Development	MIPR	Army-ECBC:Edgewood, MD	8.749	2.850	Nov 2010	-		-		-	Continuing	Continuing	0.000
HW S - (ART) Hammer Product Development-SME	MIPR	Army-ECBC:Edgewood, MD	0.600	0.200	Nov 2010	-		-		-	Continuing	Continuing	0.000
HW C - (EW) MARS JFP Product Development	PO	MITRE:Bedford, MA	0.600	0.200	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) MARS JFP Product Development #2	PO	Johns Hopkins Univ/ Applied Physics Lab (JHU-APL):Laurel, MD	0.600	0.200	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) MARS JFP Product Development #3	PO	MIT/Lincoln Labs:Lexington, MA	0.600	0.200	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development	PO	MIT/Lincoln Labs:Lexington, MA	5.050	1.650	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development #2	PO	Georgia Tech Institute of Technology:Atlanta, GA	1.500	0.500	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development #3	PO	MITRE:Bedford, MA	1.150	1.150	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development #4	PO	John Hopkins University/ Applied Physics Laboratory:Laurel, MD	1.150	1.150	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development #5	PO	Kansas City Plant (DOE):Kansas City, MO	1.150	1.150	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C - (EW) RASR Product Development #6	PO	Naval Postgraduate School:Monterey, CA	1.150	1.150	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW C- TaCBRD ATD	PO	Sandia National Laboratory:Albuquerque, NM	-	-		0.400	Nov 2011	-		0.400	Continuing	Continuing	0.000
HW C - (EW) PIWID Product Development	MIPR	JLENS:Huntsville, AL	1.261	0.500	Nov 2010	-		-		-	Continuing	Continuing	0.000
HW C- TaCBRD ATD #2	MIPR		-	-		1.000	Nov 2011	-		1.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		SPAWAR:San Diego, CA											
HW C - (CIP) JMDSE Product Development	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	0.450	0.350	Nov 2010	-		-		-	Continuing	Continuing	0.000
		Subtotal	24.010	11.250		1.400		-		1.400			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TT DEMO - ILS S - (ART) HaMMER System Support	MIPR	Research:Development & Engineering Cmd (RDECOM), Edgewood	4.214	1.414	Nov 2010	-		-		-	0.000	5.628	0.000
ILS S - (ART) Hammer OM Support	MIPR	US European Command (USEUCOM):Stuttgart, GE	0.450	0.150	Nov 2010	-		-		-	0.000	0.600	0.000
ILS S - (ART) HaMMER Support	MIPR	Edgewood Chemical and Biological Center:Edgewood, MD	1.500	0.500	Nov 2010	-		-		-	0.000	2.000	0.000
ILS C - (EW) MARS JFP Support	MIPR	Edgewood Chemical and Biological Center:Edgewood, MD	1.895	0.965	Nov 2010	-		-		-	0.000	2.860	0.000
ILS C - (EW) RASR OM Support	MIPR	20th Support Command:Aberdeen Proving Ground, MD	0.645	0.215	Nov 2010	-		-		-	0.000	0.860	0.000
ILS C - (EW) RASR OM Support #2	MIPR	MARFORPAC (PACOM):Camp Smith, HI	0.660	0.220	Nov 2010	-		-		-	0.000	0.880	0.000
ILS C- TaCBRD ATD	MIPR	SPAWAR:San Diego	-	-		0.300	Nov 2011	-		0.300	0.000	0.300	0.000
ILS C - (EW) PIWID Support-Data Analysis	MIPR		0.600	0.200	Nov 2010	-		-		-	0.000	0.800	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Air Force Research Laboratory:Wright Patterson AFB, OH											
ILS C - (EW) PIWID Support-Data Analysis #2	MIPR	JLENS:Huntsville, AL	0.600	0.200	Nov 2010	-		-		-	0.000	0.800	0.000
ILS C-TaCBRD ATD	PO	Sandia National Laboratory:Sandia, NM	-	-		0.200	Nov 2011	-		0.200	0.000	0.200	0.000
ILS C-TaCBRD ATD #2	MIPR	US European Command:Stuttgart, GE	-	-		0.300	Nov 2011	-		0.300	0.000	0.300	0.000
ILS C - (CIP) IP Demo Component Support	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	0.660	0.110	Nov 2010	-		-		-	0.000	0.770	0.000
ILS C - (CIP) JMDSE Support	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	0.600	0.200	Nov 2010	-		-		-	0.000	0.800	0.000
		Subtotal	11.824	4.174		0.800		-		0.800	0.000	16.798	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TT DEMO - OTE S - (ART) HaMMER System Testing	MIPR	Army-ECBC:Edgewood, MD	2.250	0.750	Nov 2010	-		-		-	0.000	3.000	0.000
OTE S - (ART) HaMMER T&E Oversight	MIPR	Army-ECBC:Edgewood, MD	1.200	0.400	Nov 2010	-		-		-	0.000	1.600	0.000
OTE C - (EW) MARS JFP Support	MIPR	US Army Environmental Command (AEC):Aberdeen, MD	1.000	0.200	Nov 2010	-		-		-	0.000	1.200	0.000
OTE C - (EW) MARS JFP Support #2	MIPR	Dugway Proving Ground (DPG):DPG, UT	1.300	0.300	Nov 2010	-		-		-	0.000	1.600	0.000
	MIPR		1.125	0.675	Nov 2010	-		-		-	0.000	1.800	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OTE C - (EW) RASR Component Testing		US Army Environmental Command (AEC):Aberdeen, MD											
OTE C - (EW) RASR Component Testing #2	MIPR	DPG:DPG, UT	1.125	0.675	Nov 2010	-		-		-	0.000	1.800	0.000
OTE C - (EW) RASR Component Testing #3	MIPR	US Army Developmental Test Command:Aberdeen, MD	1.181	0.729	Nov 2010	-		-		-	0.000	1.910	0.000
OTE C - (EW) PIWID Component Testing	MIPR	DPG:DPG, UT	1.200	0.400	Nov 2010	-		-		-	0.000	1.600	0.000
OTE C - (EW) PIWID Component Testing #2	MIPR	JLENS:Huntsville, AL	1.200	0.400	Nov 2010	-		-		-	0.000	1.600	0.000
OTE C-TaCBRD ATD	Allot	DTRA Test and Evaluation (CXT):Albuquerque, NM	-	-		0.300	Nov 2011	-		0.300	0.000	0.300	0.000
OTE C - (CIP) IP Demo T&E	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	4.690	1.200	Nov 2010	-		-		-	0.000	5.890	0.000
OTE C-TaCBRD ATD #2	MIPR	SPAWAR:San Diego, CA	-	-		0.150	Nov 2011	-		0.150	0.000	0.150	0.000
OTE C - (CIP) JMDSE Demo and Evaluation	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	1.200	0.400	Nov 2010	-		-		-	0.000	1.600	0.000
		Subtotal	17.471	6.129		0.450		-		0.450	0.000	24.050	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** TT DEMO - PM/MS S - HaMMER System Management	MIPR	Army - ECBC:Edgewood, MD	2.013	0.740	Nov 2010	-		-		-	0.000	2.753	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM/MS S - HaMMER System Program Management	MIPR	Army - ECBC:Edgewood, MD	2.529	0.940	Nov 2010	-		-		-	0.000	3.469	0.000
PM/MS S - MARS JFP Program Management	MIPR	Army - ECBC:Edgewood, MD	2.712	0.985	Nov 2010	-		-		-	0.000	3.697	0.000
PM/MS S - RASR Program Management	MIPR	Army - ECBC:Edgewood, MD	2.723	1.500	Nov 2010	-		-		-	0.000	4.223	0.000
PM/MS S - PIWID System Program Management	MIPR	JLENS:Huntsville, AL	0.784	0.300	Nov 2010	-		-		-	0.000	1.084	0.000
PM/MS C - IP Demo Program Management	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	1.256	0.200	Nov 2010	-		-		-	0.000	1.456	0.000
PM/MS C - TaCBRD ATD	MIPR	SPAWAR:San Diego, CA	-	-		0.200	Nov 2011	-		0.200	0.000	0.200	0.000
PM/MS C -TaCBRD ATD	PO	Sandia National Laboratory:Sandia, NM	-	-		0.172	Nov 2011	-		0.172	0.000	0.172	0.000
PM/MS C - JMDSE Program Management	MIPR	US Army Natick Soldier RD&E Center:Natick, MA	0.654	0.248	Nov 2010	-		-		-	0.000	0.902	0.000
		Subtotal	12.671	4.913		0.372		-		0.372	0.000	17.956	0.000

Remarks

Management service costs cover all ten ATDs described in the R2a of this project (TT4).

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.976	26.466		3.022		-		3.022			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

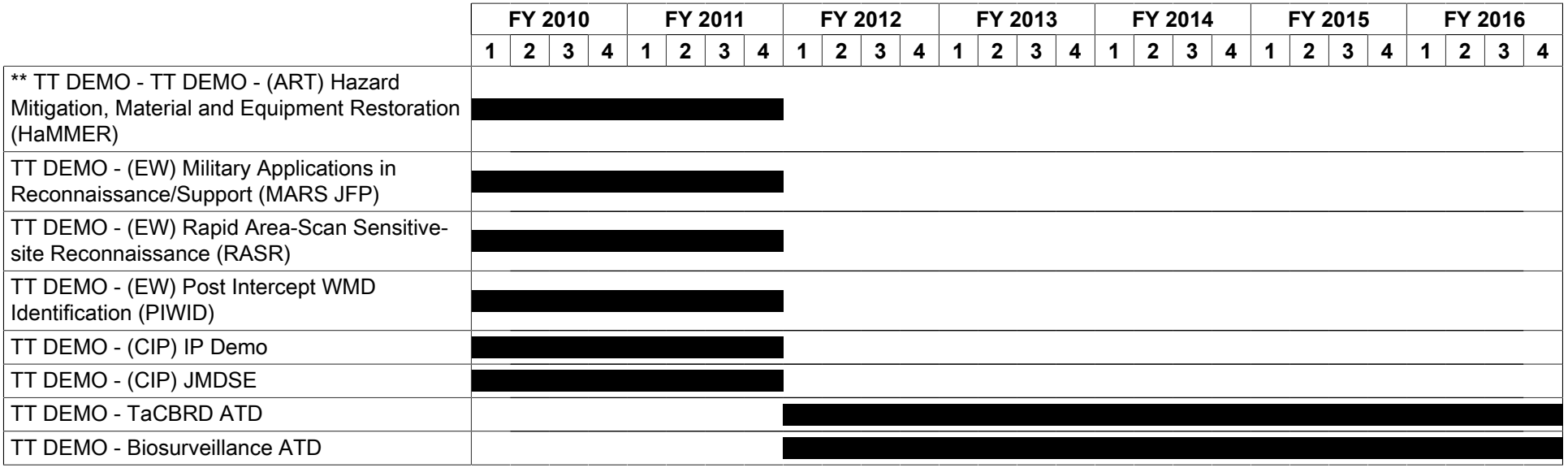

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603884BP: *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**PROJECT** TT4: *TECHBASE TECHNOLOGY TRANSITION (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** TT DEMO - TT DEMO - (ART) Hazard Mitigation, Material and Equipment Restoration (HaMMER)	1	2010	4	2011
TT DEMO - (EW) Military Applications in Reconnaissance/Support (MARS JFP)	1	2010	4	2011
TT DEMO - (EW) Rapid Area-Scan Sensitive-site Reconnaissance (RASR)	1	2010	4	2011
TT DEMO - (EW) Post Intercept WMD Identification (PIWID)	1	2010	4	2011
TT DEMO - (CIP) IP Demo	1	2010	4	2011
TT DEMO - (CIP) JMDSE	1	2010	4	2011
TT DEMO - TaCBRD ATD	1	2012	4	2016
TT DEMO - Biosurveillance ATD	1	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	237.631	407.162	400.608	-	400.608	405.991	540.890	519.249	478.114	Continuing	Continuing
CA5: *CONTAMINATION AVOIDANCE (SDD)*	67.384	124.936	52.114	-	52.114	63.524	82.148	104.170	95.822	Continuing	Continuing
CM5: *HOMELAND DEFENSE (SDD)*	2.861	1.166	9.109	-	9.109	13.829	4.961	1.979	1.954	Continuing	Continuing
CO5: *COLLECTIVE PROTECTION (SDD)*	11.847	18.459	11.307	-	11.307	14.511	7.749	-	-	0.000	63.873
DE5: *DECONTAMINATION SYSTEMS (SDD)*	17.195	28.499	4.370	-	4.370	9.189	27.426	22.381	12.410	Continuing	Continuing
IP5: *INDIVIDUAL PROTECTION (SDD)*	19.848	9.678	11.490	-	11.490	11.768	1.979	0.989	1.963	Continuing	Continuing
IS5: *INFORMATION SYSTEMS (SDD)*	17.435	13.844	2.423	-	2.423	9.523	31.465	25.381	13.010	Continuing	Continuing
MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	57.563	141.680	272.345	-	272.345	259.039	354.900	331.308	310.104	Continuing	Continuing
MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*	4.126	51.856	26.407	-	26.407	18.860	18.396	20.824	27.289	Continuing	Continuing
MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*	-	1.143	-	-	-	-	-	-	-	0.000	1.143
TE5: *TEST & EVALUATION (SDD)*	39.372	15.901	11.043	-	11.043	5.748	11.866	12.217	15.562	Continuing	Continuing

A. Mission Description and Budget Item Justification

Operational forces have an immediate need to survive, safely operate, and sustain operations in a chemical and biological agent threat environment across the continuum of global, contingency, special operations/low-intensity conflict, counter-narcotics, and other high risk missions. Operating forces have a critical need for defense against worldwide proliferation of Chemical and Biological (CB) warfare capabilities and for medical treatment of casualties in medical treatment facilities. Congress has directed centralized management of Department of Defense (DoD) CB Defense initiatives, both medical and non-medical. This program element supports the System Development and Demonstration (SDD) of CB defensive equipment, both medical and non-medical. These projects have been restructured to consolidate Joint- and Service-unique tasks within four commodity areas: contamination avoidance; force protection (individual and collective); decontamination; and medical countermeasures. The consolidation will provide for development and operational testing of equipment for Joint Service,as well as, Service-unique requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*

Contamination avoidance efforts under this system development program will provide U.S. forces with real-time hazard assessment capabilities. They include advanced multi-agent point and remote chemical detection systems 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. They include improved aircrew respiratory protection, lightweight integrated suit technology, and shipboard collective protection equipment.

The medical chemical defense system development program funds improved medical equipment and drugs essential to counteracting lethal and performance-degrading effects of chemical threats and medical equipment essential to meeting medical requirements on the integrated battlefield with emphasis on decreased size/weight and high mobility, yet supporting large numbers of combat casualties. Additionally, foreign medical materiel may be procured for exploitation of advanced technology and development to meet medical defense goals. This program element supports the development of prophylactic and therapeutic drugs and rapid identification and diagnostic systems.

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. This program element also provides for the development of biological defense medical programs. DoD Biological Defense medical mission will address: (1) Protective vaccines - vaccination capability against the most probable biological threat agents; (2) Identification - clinical identification of biological threat agents through medical evaluation and laboratory analysis to augment early warning capabilities.

CBDP reprioritization does not continue program efforts into Fiscal Year 2012 for the following programs: Medical Radiological Countermeasures (MRADC), Inhalational Atropine (IA) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs. Additionally, the BA5 reductions in support of the DoD Efficiency Initiatives for FY12 include: PD TESS efforts reduced in association with program changes (-$3.306M); Major Defense Acquisition Program support (-$2.259M); Program management support reduced (-$3.304M); Service Support Contracts reduced (-$4.025M).

The projects in this program element support efforts in the system development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	300.317	407.162	413.610	-	413.610
Current President's Budget	237.631	407.162	400.608	-	400.608
Total Adjustments	-62.686	-	-13.002	-	-13.002
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-4.469	-			
• SBIR/STTR Transfer	-3.671	-			
• Other Adjustments	-54.546	-	-13.002	-	-13.002

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: DE5: *DECONTAMINATION SYSTEMS (SDD)*		
Congressional Add: *1) Self Contained Automated Vehicle Washing Systems with microwave decontamination.*	1.593	-
Congressional Add Subtotals for Project: DE5	1.593	-
Project: IP5: *INDIVIDUAL PROTECTION (SDD)*		
Congressional Add: *1) JSAM*	2.390	-
Congressional Add Subtotals for Project: IP5	2.390	-
Congressional Add Totals for all Projects	3.983	-

Change Summary Explanation

Funding: FY10 - Realignment between BA4 and BA5 for approved threshold reprogramming to meet FAR guidelines (-$2,000K CA5; -$5,666K CM5; -$12,455K DE5; -$2,305K IP5; -$14,714K IS5; -$6,898K MC5); Other program realignments to support CBDP and DoD program initiatives (-$7,707K CA5; -$6,771K DE5; +$1,300 IP5; +$5,200K IS5; +$751K MB5; -$2,823K MC5; -$8,168K MR5; +$3,240K TE5); SBIR Transfer (-$952K CA5; -$111K CM5; -$155K CO5; -$365K DE5; -$241K IP5; -$3522K IS5; -$746K MB5; -$180K MC5; -$108K MR5; -$461K TE5).

FY12 - Adjustments less than 10% of total program.

Schedule: N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CA5: *CONTAMINATION AVOIDANCE (SDD)*	67.384	124.936	52.114	-	52.114	63.524	82.148	104.170	95.822	Continuing	Continuing
Quantity of RDT&E Articles	8	19	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

This funding supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems.

Efforts funded in this project are: (1) Chemical, Biological, Radiological, and Nuclear Dismounted Reconnaissance Systems (CBRN DRS, formerly JNBCRS Increment 2); (2) Joint Biological Point Detection System (JBPDS); (3) Joint Chemical Agent Detector (JCAD); (4) Major Defense Acquisition Program (MDAP) Support; (5) Next Generation Chemical Standoff Detection (NGCSD); (6) Non-Traditional Agent (NTA) Detection Support; and (7) 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 "JNBCRS Increment 2" was renamed to "CBRN DRS" starting in FY10.

The JBPDS is a Joint Service biological detector system. 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 Aegis class ships. The JBPDS is a fully automated system that increases the number of agents that can be identified by the current BIDS P3I and Interim Bio Agent Detector System (IBADS). JBPDS Tech Refresh consists of two separate efforts that, when combined, will reduce lifecycle costs and address obsolescence concerns. The existing computer hardware and operating system in the JBPDS will not be supportable beyond FY13 due to obsolescence. Under the existing production contract, an engineering effort is underway to address the computer and operating system obsolescence concerns. The second element is being developed under RDT&E funding for a new detector technology that will significantly reduce false alarms resulting in less consumable use and reduced operational and maintenance costs.

The JCAD program employs an incremental acquisition strategy to develop a miniaturized, rugged, and portable point chemical agent detector that automatically and simultaneously detects, identifies, quantifies, and alerts in the presence of nerve, blister, and blood chemical warfare agents. The M4 JCAD entered full rate production in September 2008 and will be produced through FY10. The attainable JCAD Increment 2 capabilities within the JCAD Increment 1 objectives were incorporated into an improvement of the M4 JCAD (M4E1). Production of the M4E1 is scheduled to begin in FY11. JCAD will be used for wheeled vehicles, stand alone, and individual soldier applications. The M4 JCAD will replace the M8A1 and the M22 Automatic Chemical Agent Alarms (ACAA/ACADA). The M4E1 may additionally replace the Chemical Agent Monitor (CAM) and Improved Chemical Agent Monitor (ICAM) and other legacy systems currently used by the individual Services.

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The Major Defense Acquisition Program (MDAP) Support program will integrate System of Systems (SoS) solutions across the Armed Services for (MDAP) having Chemical and Biological Radiological and Nuclear (CBRN) survivability requirements. The program will demonstrate modular, net-centric, "plug and play" capabilities for mounted and dismounted CBRN reconnaissance that will establish a common CBRN reconnaissance architecture across the services.

The NGCSD, a next generation chemical standoff effort initiated under the JSLSCAD program, will provide early warning for both traditional and non-traditional chemical agent attacks at fixed sites, forward operating bases and on Service designated vehicles and ships. This effort will develop and integrate new standoff sensor technologies for future standoff systems. The detection system will interface with the Services and Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) architectures.

The Non-Traditional Agent (NTA) Detection projects will develop and procure detection system(s) through incremental acquisition that will afford Warfighter's the ability to attain situational awareness and respond to emerging hazards. The products will provide a near term capability to detect priority emerging threat materials with common core technologies for detection and identification for urgent need in early FY11. The common technologies can be further exploited in future increments to address lab deployable, fixed site and handheld applications. Conduct systems engineering analysis to prioritize capability gaps and outline issues that require investment. Continue with detection component development to address capability shortfalls and expanded threats and mission areas.

The SSI NBCRS will provide a biological capability to the Chemical Biological Mass Spectrometer (CBMS) and a non-contact, low volatile, surface contamination capability supporting the NTA Detection products and the Next Generation Chemical Point Detection evaluation efforts. The CBMS effort will add the biological warfare agent and Toxic Industrial Chemical (TIC) detection and identification capability to the existing chemical liquid detection and identification capability. The integration of liquid chemical and biological aerosol detection, within a single sensor; saves size, weight, and power on the platform. The non-contact low volatile surface contamination detection capability will provide an improved capability for on-the-move, non-contact, detection and identification of Chemical Warfare Agents (CWAs), TICs, and other Non-Traditional Agents (NTAs). The SSI NBCRS transitioned from JNBCRS Increment 3 in FY10.

The Joint Biological Tactical Detection System (JBTDS) 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. JBTDS will provide warning through the Joint Warning And Reporting Network (JWARN) and archive sample for follow-on analyses. JBTDS will provide near real time local audio and visual alarm for use by any Military Occupational Specialty (MOS). JBTDS components will be man portable, battery operable and easy to employ. JBTDS will be used organically at battalion level and below and provide notification of a 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) CBRN DRS	3.618	1.407	4.000
FY 2010 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiated documentation, systems engineering, and design to support Milestone (MS) B. ***FY 2011 Plans:*** Complete documentation, systems engineering, and design to support Milestone (MS) B. Initiate documentation, systems engineering, and design to support Milestone (MS) C Low Rate Initial Production (LRIP). ***FY 2012 Plans:*** Complete documentation, systems engineering, and design to support MS C LRIP.			
Title: 2) CBRN DRS ***FY 2010 Accomplishments:*** Initiated developmental test planning and purchased component test items. ***FY 2011 Plans:*** Complete developmental test planning. Initiate and complete developmental testing at the component level. Initiate system level developmental testing. ***FY 2012 Plans:*** Complete system level developmental testing.	4.619	3.896	2.000
Title: 3) CBRN DRS ***FY 2010 Accomplishments:*** Initiated and completed Operational Assessment for trailer-mounted CBRN DRS system. ***FY 2011 Plans:*** Initiate technical manual and logistics products development for Operational Assessment for CBRN DRS Quadcon configuration (specifically designed shipping containers for systems). ***FY 2012 Plans:*** Initiate and complete Operational Assessment for CBRN DRS Quadcon system. Continue technical manual development and logistics products development.	3.800	2.800	9.148
Title: 4) CBRN DRS ***FY 2011 Plans:*** Fabricate Engineering and Manufacturing Development (EMD) systems for test (6 systems, $900K each). ***FY 2012 Plans:***	-	5.400	2.602

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Retrofit Engineering and Manufacturing Development (EMD) systems.			
Title: 5) CBRN DRS ***FY 2011 Plans:*** Initiate Developmental Testing (DT) and Operational Assessment (OA) to support initial emerging capability to meet urgent need. ***FY 2012 Plans:*** Continue testing and integration of emerging threats for enhancements.	-	4.535	2.821
Title: 6) CBRN DRS ***FY 2011 Plans:*** Initiate engineering solution for integrated emerging threats kit to address capability shortfalls.	-	3.152	-
Title: 7) CBRN DRS ***FY 2011 Plans:*** Support testing and integration development with technology development for cutting edge solutions to provide systems that address non-traditional emerging threats.	-	13.213	-
Title: 8) CBRN DRS ***FY 2011 Plans:*** Develop Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) evaluation for Sensitive Site Assessment and Consequence Management mission areas. Begin analysis for Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) evaluation in force protection mission area.	-	10.983	-
Title: 9) JBPDS ***FY 2010 Accomplishments:*** Provided strategic and tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:*** Continue strategic and tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight and technical support. ***FY 2012 Plans:***	1.320	3.476	0.991

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue strategic and tactical planning, government system engineering, program/financial management, costing, contracting, scheduling, acquisition oversight and technical support.			
Title: 10) JBPDS ***FY 2010 Accomplishments:*** Continued development of a new detector Line Replaceable Unit (LRU) for the Tech Refresh program. ***FY 2011 Plans:*** Continue development of a new detector Line Replaceable Unit (LRU) for the Tech Refresh program. ***FY 2012 Plans:*** Complete development of a new detector Line Replaceable Unit (LRU) for the Tech Refresh program.	5.280	12.906	1.994
Title: 11) JBPDS ***FY 2011 Plans:*** Initiate component level testing of the new detector LRU. ***FY 2012 Plans:*** Complete component level testing of the new detector LRU.	-	1.000	2.000
Title: 12) JCAD ***FY 2010 Accomplishments:*** Conducted M4E1 JCAD Developmental Tests to include surety chamber, MIL-STD-810/EMI, and false alarm and other testing.	3.755	-	-
Title: 13) JCAD ***FY 2010 Accomplishments:*** Provided Systems Engineering, Program Management, and T&E Integrated Product Team (IPT) Support. ***FY 2011 Plans:*** Continue Program Management Support and T&E IPT Support.	2.987	2.233	-
Title: 14) JCAD ***FY 2010 Accomplishments:*** Conducted M4E1 JCAD Follow-On Operational Test and Evaluation (FOT&E). ***FY 2011 Plans:***	3.134	2.000	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete FOT&E.			
Title: 15) JCAD ***FY 2011 Plans:*** Evaluate software enhancements and test increased capability for incorporate into CBRN DRS to meet Navy specific requirements for Vessel Boarding Search & Seizure (VBSS) mission.	-	5.500	-
Title: 16) MDAP SPRT ***Description:*** Development of modular CBRN sensing capabilities for the Small Unmanned Ground Vehicle (SUGV) and Multifunction Utility/Logistics Equipment (MULE). ***FY 2010 Accomplishments:*** Began the design, development and test of the Chemical Point Sensor (CPS), Common CBRN Sensor Interface (CCSI) Compliant Radiological Detector (CCRD), and a CCSI Sensor Mounting Cradle to meet Brigade Combat Team Modernization (BCTM) CBR detection requirements for the Small Unmanned Ground Vehicle (SUGV) and the Multifunction Utility/Logistics Equipment (MULE), unmanned vehicle platforms. The CPS and CCRD are repackaged sensors based on fully qualified hand held sensors. ***FY 2011 Plans:*** Complete the design, development and test of the Chemical Point Sensor (CPS), Common CBRN Sensor Interface (CCSI) Compliant Radiological Detector (CCRD), and a CCSI Sensor Mounting Cradle to meet Brigade Combat Team Modernization (BCTM) CBR detection requirements for the Small Unmanned Ground Vehicle (SUGV) and the Multifunction Utility/Logistics Equipment (MULE), unmanned vehicle platforms.	1.404	0.700	-
Title: 17) MDAP SPRT ***Description:*** Decontamination capabilities to meet Joint Strike Fighter (JSF) survivability requirements. ***FY 2010 Accomplishments:*** Continued the design and development of a transportable shelter system to support decontamination operations. Initiated component level and sub-scale system level testing of the transportable shelter system. ***FY 2011 Plans:*** Complete the design and development of one transportable shelter system prototype at an estimated unit cost of $1.5 million. Complete component level testing of the transportable shelter system. Start system level testing of the portable shelter system.	1.800	2.150	-
Title: 18) MDAP SPRT - JSF	1.500	4.000	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Development of an aircrew mask to meet Joint Strike Fighter (JSF) Survivability Requirements. ***FY 2010 Accomplishments:*** Began the design and development of a JSF specific aircrew mask. ***FY 2011 Plans:*** Continue the design and development of a JSF specific aircrew mask.			
Title: 19) MDAP SPRT ***Description:*** Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2010 Accomplishments:*** Conducted strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. ***FY 2011 Plans:*** Conduct strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.	3.207	2.410	-
Title: 20) NGCSD ***FY 2011 Plans:*** Integrate multi-sensor detection systems and algorithms into Technology Evaluation and field exercises.	-	8.113	-
Title: 21) NGCSD ***FY 2011 Plans:*** Conduct Joint Service support for capability document development, concept of operations (CONOPS), Tactic, Techniques and Procedures (TTPs), etc.	-	0.620	-
Title: 22) NGCSD ***FY 2011 Plans:*** Provide program management, systems engineering, and Integrated Product Team (IPT) support.	-	2.350	-
Title: 23) NGCSD ***FY 2011 Plans:***	-	0.900	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate and finalize technical manuals and logistics products that support field exercises.			
Title: 24) NGCSD ***FY 2010 Accomplishments:*** Initiated program management support. ***FY 2011 Plans:*** Complete program management support.	1.500	0.630	-
Title: 25) NTA DETECT ***FY 2010 Accomplishments:*** Initiated Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) technology evaluation for Installation Force Protection Mission Areas. Continued Development Testing (DT) of COTS/GOTS for application in the Sensitive Site Assessment (SSA) and Consequence Management (CM) mission areas. ***FY 2011 Plans:*** Complete DT for Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) evaluation for SSA and CM mission areas. Begin analysis for Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) evaluation in force protection mission area. ***FY 2012 Plans:*** Initiate DT and LOE to assess performance Commercial Off-the-Shelf (COTS)/Government Off-the-Shelf (GOTS) solution in force protection mission area.	3.012	3.299	3.470
Title: 26) NTA DETECT ***FY 2010 Accomplishments:*** Initiated integration of COTS components and library build for the Lab Deployable Mass Spectrometer. Continued integration and initiated DT for Lab Deployable Desorption Electrospray Ionization (DESI) Mass Spectrometer for CM and SSA. ***FY 2011 Plans:*** Initiate engineering to support reduced form factor for the Man Portable Mass Spectrometer. ***FY 2012 Plans:*** Continue engineering and integration for the Man Portable DESI Mass Spectrometer.	1.902	2.153	3.000
Title: 27) NTA DETECT ***FY 2010 Accomplishments:***	2.402	2.056	2.850

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiated integration of COTS components and support engineering to ruggedize and harden an environmental monitor. ***FY 2011 Plans:*** Continue engineering and integration and initiate DT to provide COTS environment monitoring capability. ***FY 2012 Plans:*** Continue DT and initiate operational assessment (OA) of environmental monitor to support force protection mission.			
Title: 28) NTA DETECT ***FY 2010 Accomplishments:*** Initiated Developmental Testing (DT) and Operational Assessment (OA) to support initial NTA capability to meet urgent need. ***FY 2011 Plans:*** Continue DT and OA to address NTA detection capability shortfall and critical data gaps. ***FY 2012 Plans:*** Update and integrate NTA detection capability with CBRN DRS to provide enhanced NTA detection solution for SSA and CM mission areas.	8.842	2.153	3.110
Title: 29) NTA DETECT ***FY 2010 Accomplishments:*** Initiated systems engineering effort to understand areas of capability shortfalls. ***FY 2011 Plans:*** Continue systems engineering analysis to prioritize technology investment strategies. ***FY 2012 Plans:*** Update systems engineering model to refine capability shortfalls with current technology advances and developmental test data inputs.	0.402	0.865	0.879
Title: 30) SSI NBCRS ***FY 2010 Accomplishments:*** Initiated engineering support, systems engineering, and Integrated Product Team (IPT) support. ***FY 2011 Plans:*** Continue program management, systems engineering, and Integrated Product Team (IPT) support. ***FY 2012 Plans:***	1.597	5.448	5.700

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue program management, systems engineering, and Integrated Product Team (IPT) support.			
Title: 31) SSI NBCRS ***FY 2010 Accomplishments:*** Initiated sensor capability development using competitive prototyping (4 vendors, 2 systems each at $1,061K per system). ***FY 2011 Plans:*** Continue sensor development, development support and demonstration using competitive prototyping (3 vendors, 4 systems each at $800K per system). ***FY 2012 Plans:*** Complete sensor demonstration using competitive prototyping.	8.491	9.836	2.140
Title: 32) SSI NBCRS ***FY 2012 Plans:*** Initiate Chemical Biological sensor Engineering and Manufacturing Development (EMD) effort.	-	-	3.495
Title: 33) SSI NBCRS ***FY 2010 Accomplishments:*** Conducted sensor Developmental Test and Evaluation (DT&E) planning. ***FY 2011 Plans:*** Initiate prototype evaluation efforts. ***FY 2012 Plans:*** Complete prototype evaluation efforts.	0.320	2.250	1.246
Title: 34) SSI NBCRS ***FY 2011 Plans:*** Initiate and complete platform integration and system support of improved sensors for competitive prototype evaluation.	-	1.500	-
Title: 35) SSI NBCRS ***FY 2010 Accomplishments:*** Initiated program management support for Stryker NBCRV path forward. ***FY 2011 Plans:***	0.500	1.002	0.668

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue program management support for Stryker NBCRV planned Full Rate Production decision and path forward. ***FY 2012 Plans:*** Continue program management support for Stryker NBCRV path forward.			
Title: 36) SSI NBCRS ***FY 2010 Accomplishments:*** Congressional add for development of Man Portable Sensors for Dismounted Reconnaissance.	1.992	-	-
Accomplishments/Planned Programs Subtotals	67.384	124.936	52.114

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JC0100: *JOINT BIO POINT DETECTION SYSTEM (JBPDS)*	41.976	43.555	26.300		26.300	36.550	49.055	49.548	7.938	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	32.294	40.071	35.172		35.172	34.347	34.347	35.871	34.380	0.000	246.482
• JN0900: *NON TRADITIONAL AGENT DETECTION (NTAD)*	0.000	4.178	3.891		3.891	4.711	0.000	0.000	0.000	0.000	12.780
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	15.721	22.511	63.714		63.714	108.647	0.000	0.000	0.000	0.000	210.593
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	6.815	15.414	6.991		6.991	19.962	30.940	39.670	24.999	0.000	144.791

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. Upon further review of the CBRN capabilities at the Materiel Development Decision (MDD), the program restructured in 4QFY10 to begin the acquisition process at Milestone (MS) B. Funding finalizes the Analysis of Materiel Solutions (AMS), materiel/prototype testing, and design to provide the Services with enhanced full spectrum CBRN detection capability to support strategic, operational, and tactical objectives at lower life cycle costs. CBRN DRS will enhance the Situational Awareness (SA) by providing a dismounted ability to detect chemical, biological

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and radiological hazards across the Range of Military Operations (ROMO) and employ contamination avoidance activities to prevent disruption to operations and organizations.

JBPDS

The Joint Biological Point Detection System (JBPDS) uses an open systems approach to insert maturing and validated technologies as part of the overall acquisition strategy to expedite fielding of a credible force protection. The JBPDS Tech Refresh program used results from a business case analysis to upgrade the system's line replaceable units (LRUs) to reduce life cycle costs and address system obsolescence concerns. Per Director, Operational Test and Evaluation (DOT&E) Memorandum dated July 9, 2002, the program will continue to support the development of a Whole System Live Agent Test (WSLAT) capability.

JBTDS

The Joint Biological Tactical Detection System (JBTDS) will be developed using an evolutionary acquisition strategy. The evolutionary approach is the preferred Department of Defense (DoD) strategy for rapid acquisition of mature technology for the warfighter. Under this approach, capability is developed in increments, recognizing up front the need for future capability improvements. Each increment is a militarily useful and supportable operational capability that can be developed, produced, deployed, and sustained. In addition, JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology and an evolutionary acquisition strategy is also consistent with the use of COTS and GOTS components. This is because as new and better technologies become available, they can be inserted faster into systems to meet the need for capability improvements.

This approach also provides capability to the warfighter in the shortest possible time. The JBTDS program will incrementally design, develop, integrate, test, procure and field systems that improve biological aerosol detection, sampling and identification capabilities and reduce size, weight, power consumption, and logistic footprint over current systems. Again, COTS and GOTS will be exploited to the fullest extent possible.

JCAD

The current strategy employs an improvement of the M4 JCAD to reduce Life Cycle costs, transition to a competitive procurement contract, and attain objective capability. Three competitive fixed-price contracts for the M4E1 were awarded in Sep 2007 for prototypes and options for full rate production. Competitive prototype testing was conducted and one system was selected for continued development. The production options will be exercised in FY11 following a successful production cut-in decision. The BA4 funding strategy will be to identify current technologies for addressing capability gaps for emerging threat not addressed by M4 and M4E1 JCAD.

MDAP SPRT

The Major Defense Acquisition Program (MDAP) Support effort will integrate Chemical, Biological, and Radiological (CBR) solution sets across the Department of Defense for platforms, including MDAPs, having CBR defense and survivability requirements. The approach used for each platform will encompass: (1) Engaging the

platform manager and establishing agreement upon the scope of effort, roles and responsibilities; (2) Performing requirements analysis and developing architectures to derive the system requirements from the capability document requirement, platform concept of operations, and appropriate threat documentation; (3) Identifying a solution set which leverages fielded items, programs of record and commercial items whenever feasible, minimizing developmental effort; (4) Verification and validation that the solution set meets the platform's requirements; (5) Providing subject matter expertise to support the integration and testing of the solution integrated onto the platform; and (6) Managing the integration of efforts across the CBR commodity areas to provide an integrated capability to the platform and identifying capability gaps through the applicable Joint Requirements Office led Integrated Concept Teams.

NGCSD

The Next Generation Chemical Standoff Detection (NGCSD) program, a next generation chemical standoff effort which was initiated under the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) program, will award Indefinite Delivery/Indefinite Quantity contract(s) to support system engineering, software development, test and evaluation, and system support efforts to increase standoff detection capabilities and identify new standoff technology. These critical contracts will allow the program office to complete current prototyping and test efforts to assess current technology and provide findings for use in the Sensor Suite Integration, the NTA Detect, Integrated Base Defense, and Bio-Surveillance programs.

NTA DETECT

The Non-Traditional Agent (NTA) 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. The products provide a near term capability to detect priority emerging threat materials with common core technologies to detect and identify threats that can further be explored for lab deployable, fixed site and handheld applications. Leveraging COTS/GOTS assessments will be used in order to lower program risks, reduce 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.

SSI NBCRS

The Sensor Suite and Integration for Nuclear Biological Chemical Reconnaissance System (SSI NBCRS) program, transitioned from Joint Nuclear Biological Chemical Reconnaissance System (JNBCRS) Increment 3 in FY10, will develop and test platform specific prototype Chemical Biological Mass Spectrometer (CBMS) capability. System development will be performed by separate full and open contract solicitation for CBMS to demonstrate a technology readiness level (TRL) 6 in laboratory and field testing. Subsequent contract efforts will mature the system to a TRL 7 and will include extensive laboratory and early user testing, test and evaluation. Upon successful completion, a In-Process Review (IPR) will be held to approve low-rate initial production of the CBMS. The non-contact, low volatile, surface contamination capability contract efforts will produce at least three prototypes of each system.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - HW C - DR SKO Program Development	SS/CPFF	AGENTASE-ICX:Pittsburgh, PA	3.650	4.500	Feb 2011	4.500	Feb 2012	-		4.500	Continuing	Continuing	0.000
HW S - DR SKO Program development	SS/CPFF	AGENTASE ICX:Pittsburgh, PA	2.434	2.100	Feb 2011	2.500	Feb 2012	-		2.500	Continuing	Continuing	0.000
HW S - NTA enhancements	C/FP	Various:	-	15.023	Aug 2011	2.821	Feb 2012	-		2.821	Continuing	Continuing	0.000
** JBPDS - SW SB - New Detector Development, modification and development.	MIPR	MA Institute of Tech-Lincoln Labs MIT-LL):Boston, MA	6.271	5.640	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW S - New Detector Development, modification and integration.	C/CPIF	TBD:	-	6.296	Feb 2011	1.524	Feb 2012	-		1.524	Continuing	Continuing	0.000
** JCAD - SW SB - Enhanced Detector Development for VBSS	C/FFP	TBD:	-	1.500	Feb 2011	-		-		-	Continuing	Continuing	0.000
** MDAP SPRT - HW S - JSF Decon Shelter	MIPR	Various:	3.500	2.150	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW S - JSF Aircrew Mask	MIPR	Various:	1.500	4.000	Feb 2011	-		-		-	Continuing	Continuing	0.000
SW SB - SUGV/MULE CBRN Sensor	MIPR	Various:	2.504	0.700	Feb 2011	-		-		-	Continuing	Continuing	0.000
** NGCSD - SW SB - Prototype System Development & Integration	C/CPFF	TBD:	-	5.223	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW SB - Prototype System Development & Integration	C/FFP	TBD:	-	2.890	Feb 2011	-		-		-	Continuing	Continuing	0.000
** NTA DETECT - HW S - DESI Mass Spec	C/CPAF	ICX Griffin:West Lafayette, IN	0.784	0.589	Feb 2011	1.653	Feb 2012	-		1.653	Continuing	Continuing	0.000
HW S - GOTS/COTS Dual Use Assessment	C/CPAF	Battelle:Crystal City, VA	1.305	1.093	Feb 2011	1.600	Feb 2012	-		1.600	Continuing	Continuing	0.000
SW S - DESI Mass Spec Library Development	MIPR	RDECOM:Aberdeen Proving Ground, MD	0.416	0.403	Nov 2010	0.450	Feb 2012	-		0.450	Continuing	Continuing	0.000
HW S - COTS Enzyme based technologies	C/CPAF	AGENTASE - ICX:Pittsburgh, PA	1.005	1.153	Feb 2011	1.011	Feb 2012	-		1.011	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HW S - Environmental Monitor	C/CPAF	AGENTASE - ICX:Pittsburgh, PA	1.500	1.003	Feb 2012	2.022	Aug 2012	-		2.022	Continuing	Continuing	0.000
** SSI NBCRS - HW S - Sensor Capability Development (3 vendors, 4 systems each)	C/CPIF	TBD:	-	9.836	Feb 2011	2.140	Feb 2012	-		2.140	Continuing	Continuing	0.000
SW SB - CB sensor EMD effort	C/CPIF	TBD:	-	-		3.496	Feb 2012	-		3.496	Continuing	Continuing	0.000
HW S - Sensor Platform Integration	C/CPIF	TBD:	-	1.500	Feb 2011	-		-		-	Continuing	Continuing	0.000
		Subtotal	24.869	65.599		23.717		-		23.717			0.000

Remarks

Contract Award: Jul 2010
Camber Corporation, Huntsville, AL
Northrop Grumman, Herndon, VA
Midwest Research Institute, Kansas City, MO
Battelle Memorial Institute, Columbus, OH

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - ES S - NTA Enhancements	C/CPIF	Various:	-	3.860	Feb 2011	-		-		-	0.000	3.860	0.000
ES S - Logistics	MIPR	Edgewood Chemical Biological Center:Edgewood, MD	0.400	0.700	Nov 2010	0.700	Nov 2011	-		0.700	0.000	1.800	0.000
** JBPDS - ILS S New Detector logistics and support documentation	C/CPIF	TBD:	-	1.470	Feb 2011	0.470	Feb 2012	-		0.470	0.000	1.940	0.000
	MIPR	Various:	-	0.900	Feb 2011	-		-		-	0.000	0.900	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGCSD - TD/D SB - Logistics Planning and Development													
** NTA DETECT - ES SB - Mass Spectrometer Analysis and Evaluation	C/CPFF	JRAD:Stafford, VA	0.273	0.108	Feb 2011	0.137	Feb 2012	-		0.137	0.000	0.518	0.000
ES S - Systems engineering support	C/CPFF	Lockheed Martin:Philadelphia, PA	0.402	0.865	Feb 2011	0.923	Feb 2012	-		0.923	0.000	2.190	0.000
		Subtotal	1.075	7.903		2.230		-		2.230	0.000	11.208	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - DTE S - DR SKO Developmental Testing and Operational Assessment	MIPR	ATEC:Alexandria, VA	-	4.100	Feb 2011	8.000	Feb 2012	-		8.000	0.000	12.100	0.000
DTE S - NTA Enhancements	MIPR	MULTIPLE:	-	11.800	Feb 2011	-		-		-	0.000	11.800	0.000
** JBPDS - DTE S - New Detector developmental testing.	MIPR	MIT-LL:Boston, MA	-	1.000	Feb 2011	-		-		-	0.000	1.000	0.000
DTE S - New Detector developmental testing.	C/CPIF	TBD:	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	0.000
** JCAD - OTE S - M4E1 JCAD Follow-On Operational Test and Evaluation (FOT&E)	MIPR	Various:	8.114	2.000	Nov 2010	-		-		-	0.000	10.114	0.000
OTHT S - Conduct Enhanced Detector Developmental Testing	MIPR	Various:	-	4.000	May 2011	-		-		-	0.000	4.000	0.000
** NTA DETECT - DTE S - Developmental Test Mass Spectrometer	C/CPFF	Battelle Memorial Institute:Columbus, OH	0.585	0.502	Feb 2011	0.653	Feb 2012	-		0.653	0.000	1.740	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OTE S - OA Test and Evaluation Support	MIPR	OTC:Ft. Hood, TX	0.301	0.598	Aug 2011	1.045	Aug 2012	-		1.045	0.000	1.944	0.000
** SSI NBCRS - OTHT S - Prototype Evaluation	MIPR	Various:	-	2.250	Feb 2011	1.249	Feb 2012	-		1.249	0.000	3.499	0.000
		Subtotal	9.000	26.250		12.947		-		12.947	0.000	48.197	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CBRN DRS - PM/MS-S - Program Management and System Engineering Support	MIPR	JPM NBC CA:APG, MD	1.702	1.502	Nov 2010	1.450	Nov 2011	-		1.450	0.000	4.654	0.000
PM/MS S - NTA Enhancements Program Management and System Engineering Support	MIPR	JPM NBC CA:APG, MD	-	1.200	Nov 2010	-		-		-	0.000	1.200	0.000
PM/MS S - Integrated Product Team	MIPR	Various:	0.560	0.601	Nov 2010	0.600	Nov 2011	-		0.600	0.000	1.761	0.000
** JBPDS - PM/MS S - Project Management	MIPR	JPM BD:APG, MD	6.711	1.790	Nov 2010	0.693	Nov 2011	-		0.693	0.000	9.194	0.000
PM/MS S - New Detector prime contractor management support	MIPR	MIT-LL:Boston, MA	0.175	0.350	Feb 2011	-		-		-	0.000	0.525	0.000
PM/MS S - New Detector prime contractor management support #2	C/CPIF	TBD:	-	0.836	Feb 2011	0.298	Feb 2012	-		0.298	0.000	1.134	0.000
** JCAD - PM/MS S - Joint Service Support	MIPR	Various:	5.985	2.233	Feb 2011	-		-		-	0.000	8.218	0.000
** MDAP SPRT - PM/MS SB - MDAP SPRT Management & Oversight	MIPR	Various:	3.207	2.410	Feb 2011	-		-		-	0.000	5.617	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGCSD - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC CA:APG, MD	-	2.350	Feb 2011	-		-		-	0.000	2.350	0.000
PM/MS SB - Joint Service Combat Developer Support	MIPR	Various:	-	0.620	Feb 2011	-		-		-	0.000	0.620	0.000
PM/MS S - Program Management and Systems Engineering Support	MIPR	JPEO-CBD:Falls Church, VA	1.500	0.630	Aug 2011	-		-		-	0.000	2.130	0.000
** NTA DETECT - PM/MS S - Program Management support	MIPR	JPM NBCCA:Edgewood, MD	2.808	3.633	Aug 2011	3.815	Aug 2012	-		3.815	0.000	10.256	0.000
PM/MS S - Program Management and Systems Engineering Support #2	MIPR	JPEO-CBD:Falls Church, VA	-	0.579	Aug 2011	-		-		-	0.000	0.579	0.000
** SSI NBCRS - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC CA:APG, MD	1.597	5.448	Feb 2011	5.700	Feb 2012	-		5.700	0.000	12.745	0.000
PM/MS S - Program Management and Systems Engineering Support #3	MIPR	JPEO-CBD:Falls Church, VA	0.500	1.002	Aug 2011	0.664	Feb 2012	-		0.664	0.000	2.166	0.000
		Subtotal	24.745	25.184		13.220		-		13.220	0.000	63.149	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.689	124.936		52.114		-		52.114			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

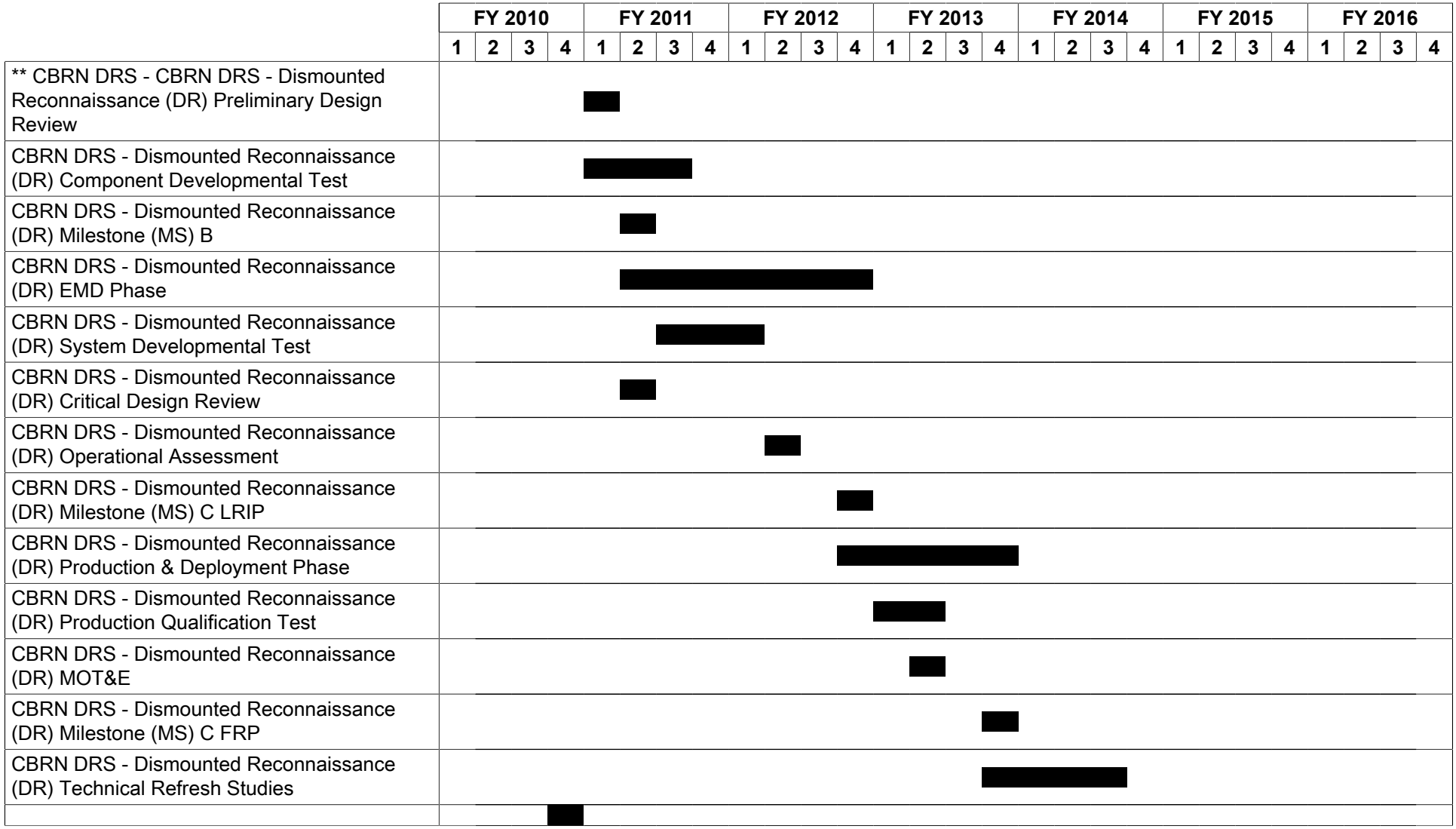

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

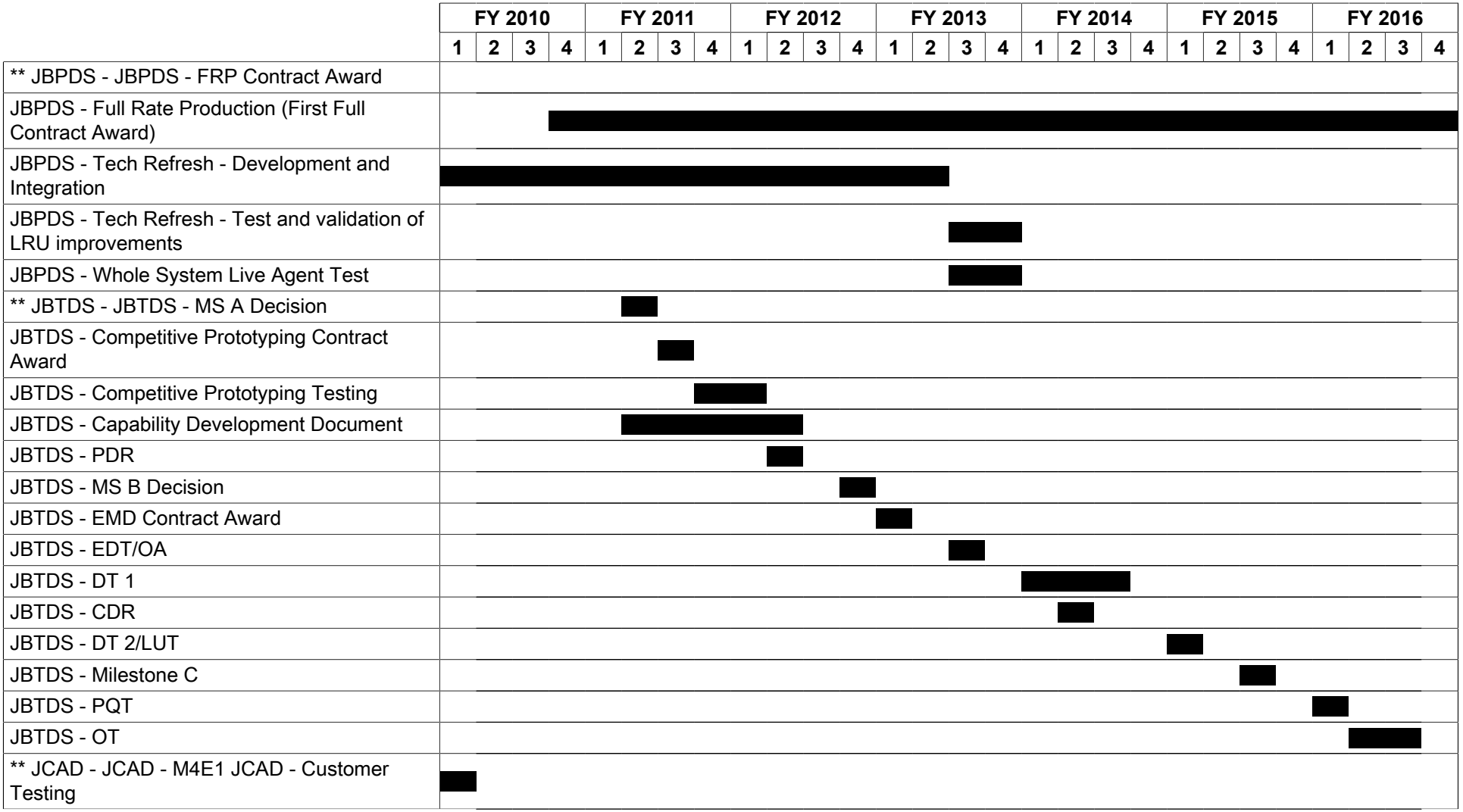

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

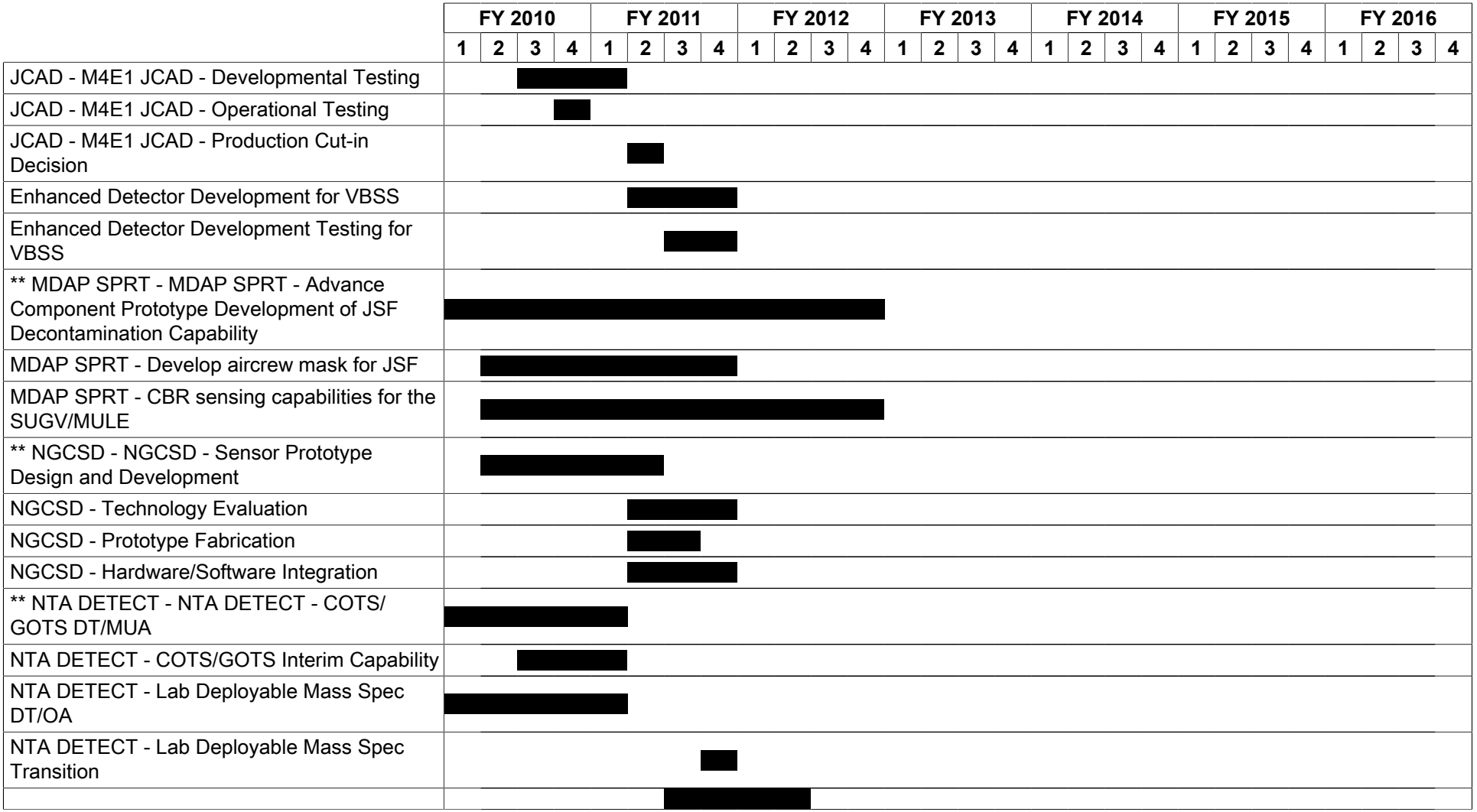

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

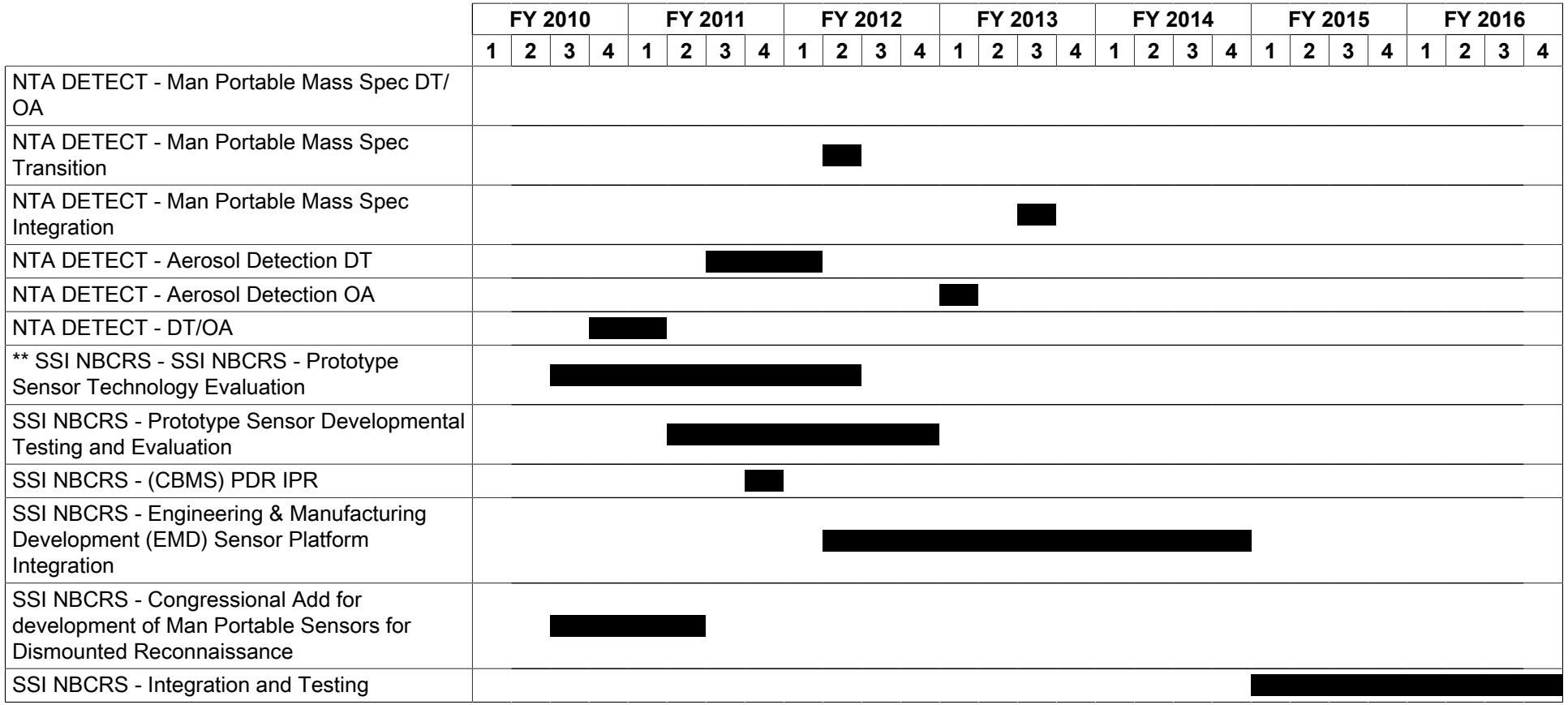

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** CA5: *CONTAMINATION AVOIDANCE (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CBRN DRS - CBRN DRS - Dismounted Reconnaissance (DR) Preliminary Design Review	1	2011	1	2011
CBRN DRS - Dismounted Reconnaissance (DR) Component Developmental Test	1	2011	3	2011
CBRN DRS - Dismounted Reconnaissance (DR) Milestone (MS) B	2	2011	2	2011
CBRN DRS - Dismounted Reconnaissance (DR) EMD Phase	2	2011	4	2012
CBRN DRS - Dismounted Reconnaissance (DR) System Developmental Test	3	2011	1	2012
CBRN DRS - Dismounted Reconnaissance (DR) Critical Design Review	2	2011	2	2011
CBRN DRS - Dismounted Reconnaissance (DR) Operational Assessment	2	2012	2	2012
CBRN DRS - Dismounted Reconnaissance (DR) Milestone (MS) C LRIP	4	2012	4	2012
CBRN DRS - Dismounted Reconnaissance (DR) Production & Deployment Phase	4	2012	4	2013
CBRN DRS - Dismounted Reconnaissance (DR) Production Qualification Test	1	2013	2	2013
CBRN DRS - Dismounted Reconnaissance (DR) MOT&E	2	2013	2	2013
CBRN DRS - Dismounted Reconnaissance (DR) Milestone (MS) C FRP	4	2013	4	2013
CBRN DRS - Dismounted Reconnaissance (DR) Technical Refresh Studies	4	2013	3	2014
** JBPDS - JBPDS - FRP Contract Award	4	2010	4	2010
JBPDS - Full Rate Production (First Full Contract Award)	4	2010	4	2016
JBPDS - Tech Refresh - Development and Integration	1	2010	2	2013
JBPDS - Tech Refresh - Test and validation of LRU improvements	3	2013	4	2013
JBPDS - Whole System Live Agent Test	3	2013	4	2013
** JBTDS - JBTDS - MS A Decision	2	2011	2	2011
JBTDS - Competitive Prototyping Contract Award	3	2011	3	2011
JBTDS - Competitive Prototyping Testing	4	2011	1	2012
JBTDS - Capability Development Document	2	2011	2	2012

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CA5: *CONTAMINATION AVOIDANCE (SDD)*

	Start		End	
Events	Quarter	Year	Quarter	Year
JBTDS - PDR	2	2012	2	2012
JBTDS - MS B Decision	4	2012	4	2012
JBTDS - EMD Contract Award	1	2013	1	2013
JBTDS - EDT/OA	3	2013	3	2013
JBTDS - DT 1	1	2014	3	2014
JBTDS - CDR	2	2014	2	2014
JBTDS - DT 2/LUT	1	2015	1	2015
JBTDS - Milestone C	3	2015	3	2015
JBTDS - PQT	1	2016	1	2016
JBTDS - OT	2	2016	3	2016
** JCAD - JCAD - M4E1 JCAD - Customer Testing	1	2010	1	2010
JCAD - M4E1 JCAD - Developmental Testing	3	2010	1	2011
JCAD - M4E1 JCAD - Operational Testing	4	2010	4	2010
JCAD - M4E1 JCAD - Production Cut-in Decision	2	2011	2	2011
Enhanced Detector Development for VBSS	2	2011	4	2011
Enhanced Detector Development Testing for VBSS	3	2011	4	2011
** MDAP SPRT - MDAP SPRT - Advance Component Prototype Development of JSF Decontamination Capability	1	2010	4	2012
MDAP SPRT - Develop aircrew mask for JSF	2	2010	4	2011
MDAP SPRT - CBR sensing capabilities for the SUGV/MULE	2	2010	4	2012
** NGCSD - NGCSD - Sensor Prototype Design and Development	2	2010	2	2011
NGCSD - Technology Evaluation	2	2011	4	2011
NGCSD - Prototype Fabrication	2	2011	3	2011
NGCSD - Hardware/Software Integration	2	2011	4	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** CA5: *CONTAMINATION AVOIDANCE (SDD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** NTA DETECT - NTA DETECT - COTS/GOTS DT/MUA	1	2010	1	2011
NTA DETECT - COTS/GOTS Interim Capability	3	2010	1	2011
NTA DETECT - Lab Deployable Mass Spec DT/OA	1	2010	1	2011
NTA DETECT - Lab Deployable Mass Spec Transition	4	2011	4	2011
NTA DETECT - Man Portable Mass Spec DT/OA	3	2011	2	2012
NTA DETECT - Man Portable Mass Spec Transition	2	2012	2	2012
NTA DETECT - Man Portable Mass Spec Integration	3	2013	3	2013
NTA DETECT - Aerosol Detection DT	3	2011	1	2012
NTA DETECT - Aerosol Detection OA	1	2013	1	2013
NTA DETECT - DT/OA	4	2010	1	2011
** SSI NBCRS - SSI NBCRS - Prototype Sensor Technology Evaluation	3	2010	2	2012
SSI NBCRS - Prototype Sensor Developmental Testing and Evaluation	2	2011	4	2012
SSI NBCRS - (CBMS) PDR IPR	4	2011	4	2011
SSI NBCRS - Engineering & Manufacturing Development (EMD) Sensor Platform Integration	2	2012	4	2014
SSI NBCRS - Congressional Add for development of Man Portable Sensors for Dismounted Reconnaissance	3	2010	2	2011
SSI NBCRS - Integration and Testing	1	2015	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CM5: *HOMELAND DEFENSE (SDD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CM5: *HOMELAND DEFENSE (SDD)*	2.861	1.166	9.109	-	9.109	13.829	4.961	1.979	1.954	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) 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.

Efforts funded in this project are:

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 can accommodate quick installation or removal of equipment as mission requirements dictate. As well, it will provide 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 sample types.

The CB Installation Protection Program (CBIPP) supports the development of analytical methodologies to expand/enhance the operational capabilities of currently fielded CBRN detection, identification and protection technologies against emerging threats to include Toxic Industrial Chemicals (TICs), Chemical Warfare Agents (CWAs), and Biological Warfare Agents (BWAs). Detection and identification of these substances is currently difficult and time-consuming. Current systems lack extensive libraries to support rapid identification. Identification may also involve multiple, expensive technologies. The ability to rapidly detect and identify a TIC is essential to effectively control and mitigate its effects, thus protecting personnel. This program also supports the evaluation of emerging CBRN detection, identification, information management and decision support technologies to DoD response units to maintain required state of the art capabilities.

The Weapons of Mass Destruction Civil Support Team Program supports the ongoing assessment and acquisition of COTS and 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 2010	FY 2011	FY 2012
Title: 1) CALS - System Engineering and Program Management	-	1.166	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: System engineering and technical control, as well as the business management of the system/program. 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.) ***FY 2011 Plans:*** Completed System Engineering and Program Management Support related to contract development and procurement actions.			
Title: 2) FORCE PROT - Large Filter Study ***Description:*** Large Filter, M48A1 Gas Particulate Filter (GPF), Testing. ***FY 2010 Accomplishments:*** Completed surety testing of M48A1 GPF.	0.924	-	-
Title: 3) FORCE PROT - CatOx Integration ***Description:*** Catalytic Oxidation (CatOx) air purification system integration into the Analytical Laboratory System's (ALS) Class III Glovebox. ***FY 2010 Accomplishments:*** Monitored contractor engineering studies. Conducted non-surety testing on contractor prototype.	0.234	-	-
Title: 4) FORCE PROT - Filter Life Surveillance ***Description:*** Filter Life Surveillance Testing to determine performance of M98 Gas Particle Filter Sets used in fixed collective protection systems when used for extended periods with an objective to reduce life cycle costs. ***FY 2010 Accomplishments:*** Completed Filter Life Surveillance Testing.	0.100	-	-
Title: 5) FORCE PROT - Alternative Systems Analysis ***Description:*** Alternative Systems Analysis to develop and apply an analytical capability to evaluate alternate concepts and technologies for collective protection of fixed sites (buildings) to optimize mission preservation and reduce the life cycle cost. ***FY 2010 Accomplishments:*** Completed Alternative Systems Analysis for Fixed Collective Protection Systems.	0.900	-	-
Title: 6) FORCE PROT - Fixed ColPro System Test Bed	0.250	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Modify Fixed Collective Protection System Test Bed and conduct trials to compare the protection level provided by various Fixed Collective Protection systems and operating conditions. ***FY 2010 Accomplishments:*** Completed Fixed ColPro System Test Bed trials.			
Title: 7) FORCE PROT - Management Oversight ***Description:*** Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2010 Accomplishments:*** Provided strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0.353	-	-
Title: 8) WMD CST - TIC TIM Task Force ***Description:*** The Toxic Industrial Chemical/Toxic Industrial Material (TIC/TIM) Task Force (TTTF) was established to provide TIC prioritization and baseline TIC acquisition capability recommendations to the Joint Program Executive Office for Chemical & Biological Defense (JPEO-CBD). The focus has been primarily on intentional/collateral large scale release scenarios of acutely hazardous TICs in a military operational setting that could cause notable operational risk. The TTTF products have included the following products: #1 TIC prioritization process and results. #2 Operational hazard and risk assessment results. #3 Results of the portfolio analysis. #4 Results of TIC test procedure standardization efforts, which include the development of a test procedure framework, two draft priority test procedures, a test procedure repository, and a test procedure status report. ***FY 2010 Accomplishments:*** Provided for collaboration with the NATO Joint Coordination Group and partner countries to develop and present a Data Document collecting and synthesizing the results of several international studies related to TIC/TIM threat analysis, detection capabilities, and testing regiments to provide heightened awareness and institutionalization of the findings/results on the international stage.	0.100	-	-
Title: 9) WMD CST - System Engineering and Program Management	-	-	2.620

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: 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). ***FY 2012 Plans:*** Provide for system engineering, technical control, and business management support of the Meso Scale Defense System.			
Title: 10) WMD CST - Development Engineering ***Description:*** 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. ***FY 2012 Plans:*** Initiate Development of reagents for the Meso Scale Defense (MSD) biological detection system to be integrated into the Analytical Laboratory System.	-	-	3.494
Title: 11) WMD CST - Development Engineering ***Description:*** This element includes the costs of study, analysis, design development, evaluation, testing, and redesign for the system component(s) during the system development efforts. It includes the design efforts of preparing specifications, establishment of reliability, maintainability, and quality assurance control requirements. This element 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. ***FY 2012 Plans:*** Initiate development of method protocols for sampling with the Meso Scale Defense biological detection system for integration into the Analytical Laboratory System.	-	-	1.498
Title: 12) WMD CST - System Test and Evaluation ***Description:*** General system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations.	-	-	1.497

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Conduct Meso Scale Defense Biological detection system Component Test and evaluation.			
Accomplishments/Planned Programs Subtotals	2.861	1.166	9.109

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JS0004: *WMD - CIVIL SUPPORT TEAMS (WMD CST)*	12.565	39.862	15.900		15.900	28.797	20.044	30.519	32.304	Continuing	Continuing
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	0.000	0.000	0.000		0.000	0.000	14.765	19.962	29.608	Continuing	Continuing
• JS0500: *CB INSTALLATION/ FORCE PROTECTION PROGRAM (FORCE PROT)*	54.123	50.773	0.000		0.000	0.000	0.000	0.000	0.000	0.000	104.896

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.

FORCE PROT

The Special Study for System Methodology Development will support the development of analytical methodologies to expand/enhance the operational capabilities of currently fielded CBRN detection, identification and protection technologies against emerging threats to include TIC, CWA, and BWA threats.

The Special Study for CBRN Defense Technology Evaluation will support the evaluation of emerging CBRN detection, identification, information management and decision support technologies to DoD response units to maintain required state-of-the-art capabilities.

WMD CST

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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This program utilizes multiple acquisition vehicles to deliver a CBRN capability to the WMD response units. The CALS program will upgrade the analytical capability with the objective of improving chemical and biological detection sensitivity and selectivity of the WMD CST Analytical Laboratory System Increment 1 and the 20th SUPCOM heavy and light tactical lab variants. Additionally, the CALS will integrate the communications and reachback capability for mobile CBRN homeland defense capability as required by the Joint Requirements Oversight Council (JROC).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** WMD CST - HW S - Meso Scale Defense - Reagent Development	MIPR	TBD:	-	-		3.495	Feb 2012	-		3.495	Continuing	Continuing	0.000
HW S - Method Protocol Development	MIPR	TBD:	-	-		1.500	May 2012	-		1.500	Continuing	Continuing	0.000
		Subtotal	-	-		4.995		-		4.995			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** WMD CST - ES S - Meso Scale Defense - Support	MIPR	Edgewood Chemical Biological Center:Edgewood, MD	-	-		1.207	Feb 2012	-		1.207	0.000	1.207	0.000
		Subtotal	-	-		1.207		-		1.207	0.000	1.207	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** WMD CST - OTHT C - Meso Scale Defense Component Testing	MIPR	TBD:	-	-		1.497	May 2012	-		1.497	0.000	1.497	0.000
		Subtotal	-	-		1.497		-		1.497	0.000	1.497	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CALS - PM/MS HW - Program Office - Planning and Programming	MIPR	Edgewood Chemical Biological Center:Edgewood, MD	-	1.166	Feb 2011	-		-		-	0.000	1.166	0.000
** WMD CST - PM/MS S - Meso Scale Defense System	MIPR	TBD:	-	-		1.410	Feb 2012	-		1.410	0.000	1.410	0.000
		Subtotal	-	1.166		1.410		-		1.410	0.000	2.576	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.166		9.109		-		9.109			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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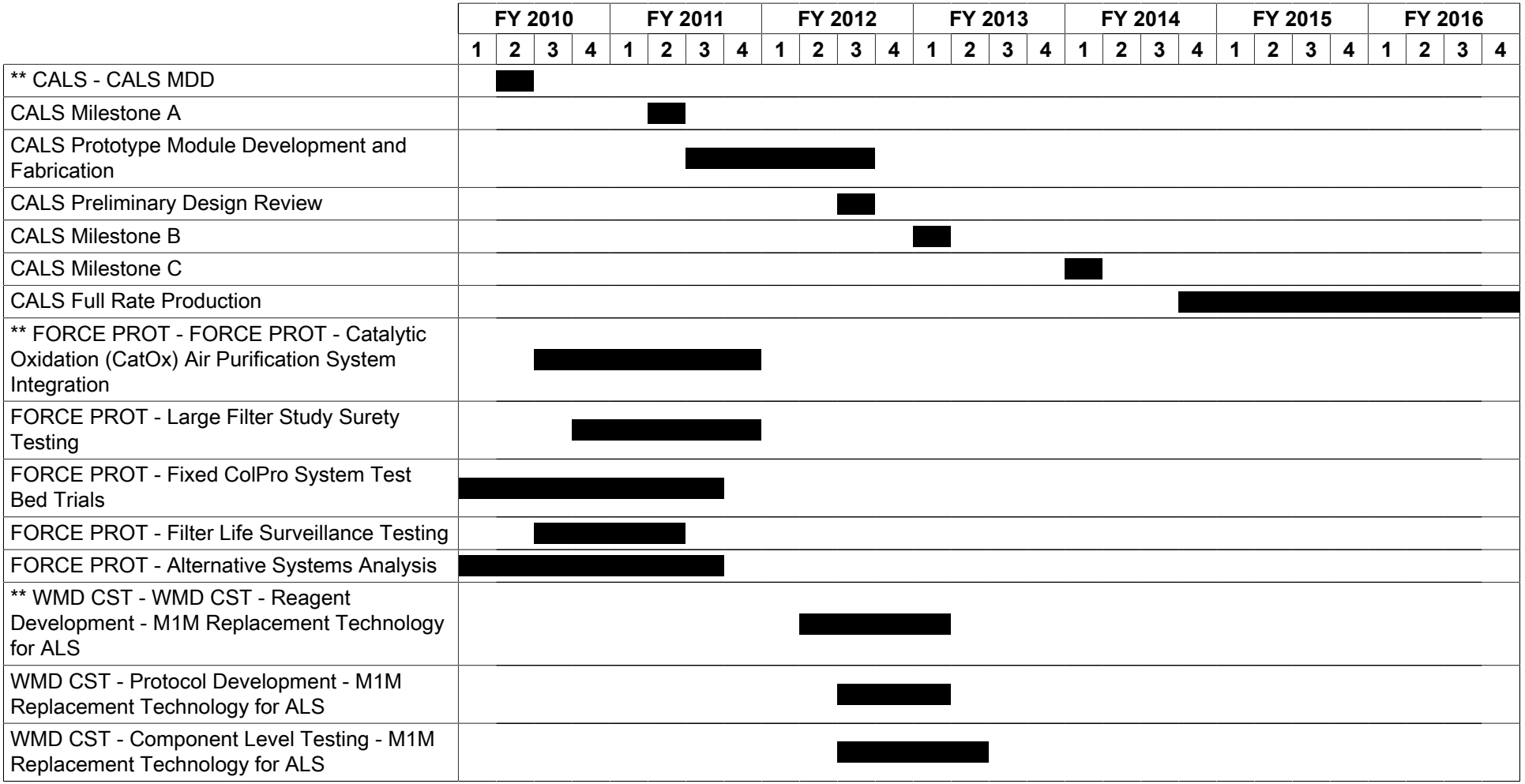

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CALS - CALS MDD	2	2010	2	2010
CALS Milestone A	2	2011	2	2011
CALS Prototype Module Development and Fabrication	3	2011	3	2012
CALS Preliminary Design Review	3	2012	3	2012
CALS Milestone B	1	2013	1	2013
CALS Milestone C	1	2014	1	2014
CALS Full Rate Production	4	2014	4	2016
** FORCE PROT - FORCE PROT - Catalytic Oxidation (CatOx) Air Purification System Integration	3	2010	4	2011
FORCE PROT - Large Filter Study Surety Testing	4	2010	4	2011
FORCE PROT - Fixed ColPro System Test Bed Trials	1	2010	3	2011
FORCE PROT - Filter Life Surveillance Testing	3	2010	2	2011
FORCE PROT - Alternative Systems Analysis	1	2010	3	2011
** WMD CST - WMD CST - Reagent Development - M1M Replacement Technology for ALS	2	2012	1	2013
WMD CST - Protocol Development - M1M Replacement Technology for ALS	3	2012	1	2013
WMD CST - Component Level Testing - M1M Replacement Technology for ALS	3	2012	2	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
CO5: *COLLECTIVE PROTECTION (SDD)*	11.847	18.459	11.307	-	11.307	14.511	7.749	-	-	0.000	63.873
Quantity of RDT&E Articles	72	0	0		0	72	0	0	0		

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.

Systems funded under this project are: 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 2010	FY 2011	FY 2012
Title: 1) JECP - Engineering and Manufacturing Development (EMD) Contract	4.030	2.492	1.039
Description: Engineering and Manufacturing Development 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). ***FY 2010 Accomplishments:*** Completed detailed design activities with design review; held User demonstration of early prototypes with Design and Trade Studies Review. Conducted an Integrated Baseline Review and In-Process Reviews. Provided support for Government agent and simulant component level Developmental Test (DT). Manufactured prototype systems for Contractor system level DT. Began Contractor system level DT (including environmental and electromagnetic interference testing). Began manufacture of prototypes for Government system level DT. Prototypes consist of 18 tent kits (3 configurations, 6 units each) at approximately $75 thousand each, 12 structure kits at approximately $56 thousand each, 6 stand alone (SA) man-portable at approximately $7 thousand each, 6 SA small at approximately $22 thousand each, 6 SA medium at approximately $67 thousand each, 6 SA large at approximately			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
$167 thousand each, 9 single person airlocks at approximately $5 thousand each and 9 multi-person airlocks at approximately $30 thousand each. Estimated total multi-year cost of all prototypes: $3.915 million. ***FY 2011 Plans:*** Complete Contractor system level DT. Complete manufacture of prototypes for Government system level DT. Conduct Critical Design Review (CDR). Provide support for Government system level DT of all 9 configurations of the FoS including training, maintenance, troubleshooting and repair. ***FY 2012 Plans:*** Continue providing support for Government system level DT with combined Operational and DT field events, logistics/manpower and personnel integration (MANPRINT) demonstration, and operational assessment (OA). Conduct System Verification Review, Functional Configuration Audit and Production Readiness Review.			
Title: 2) JECP - Government Component Level Developmental Testing ***Description:*** Conduct Government component level developmental testing (DT) using agent and simulant to determine compliance with SPS protection requirements. Used test data from agent and simulant testing to establish a defendable agent to simulant relationship (ASR). Develop component level empirical models to provide to the JECP System Performance Model (SPM). ***FY 2010 Accomplishments:*** Completed Barrier Materials Swatch Testing and Air-Purification Component Testing. Established ASR and provide component level empirical models to provide to the JECP SPM team.	2.096	-	-
Title: 3) JECP - Government System Level Testing ***Description:*** 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 SPM. ***FY 2010 Accomplishments:*** Developed Design of Experiment (DoE) to ensure optimum results are achieved from the Government system level Developmental Testing (DT) that is conducted. ***FY 2011 Plans:***	0.322	8.587	5.014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Begin Non-CB mode OT of the Family of Systems (FoS) in littoral and desert environments. Begin Reliability and Maintainability Analysis, static and dynamic system verification testing on the FoS. Conduct accelerated materials aging study. ***FY 2012 Plans:*** Complete Non-CB mode OT of the Family of Systems (FoS) in littoral and desert environments. Complete Reliability and Maintainability Analysis, static and dynamic system verification testing on the FoS. Conduct DT system field challenge, 30 day continuous operations verification testing, OA and post field static system verification testing. Begin post field Government component level DT consisting of Barrier Materials Swatch Testing, and Air-Purification Component Testing.			
Title: 4) JECP - Systems Engineering IPT ***Description:*** 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. ***FY 2010 Accomplishments:*** Updated the System Performance Specification (SPS) and participated in contract re-negotiations. Updated and maintained the Requirements Traceability Matrix (RTM) to be consistent with the updated SPS. Monitored detailed design activities including design review; participated in User demonstration of early prototypes and Design and Trade Studies Review. Participated in an Integrated Baseline Review and In-Process Reviews. Monitored manufacture of EMD prototypes. Provided support for Contractor system level DT and Government agent and simulant component level DT. Assisted planning of Government system level DT. ***FY 2011 Plans:*** Update and maintain the RTM to track when requirements have been verified as test results become available. Ensure FoS ready for and participate in CDR. Prepare Post-CDR Assessment. Participate in Configuration Control Board. Monitor manufacture of Government system level DT prototypes. Provide support for Contractor system level DT and Government agent and simulant component level DT. Assist planning and conduct of Government system level DT. ***FY 2012 Plans:*** Develop, update and/or review program documentation in preparation for MS C. Provide support for Government system level DT. Ensure FoS ready for and participate in System Verification Review, Functional Configuration Audit and Production Readiness Review.	1.074	1.153	0.840
Title: 5) JECP - Test and Evaluation IPT ***Description:*** Lead and oversee all aspects of the JECP Integrated Test (IT) program.	0.812	1.127	0.750

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Conducted integrated test planning, coordination, and test readiness reviews associated with Government component level DT and Contractor system level DT. Reviewed test plans, procedures and reports and witnessed contractor system level test events as needed. Assisted in the development of the Design of Experiment and associated Test Matrices in support of Government system level DT. Reviewed component level test data and reports (including reliability test results and key performance parameters (KPP) failures). ***FY 2011 Plans:*** Develop and/or review test plans, procedures and reports. Ensure FoS ready for and participate in CDR. Participate in Configuration Control Board as necessary. ***FY 2012 Plans:*** Continue to review test procedures and reports and participate in Government system level DT and operational assessment. Provide results from component and system level DT to User for incorporation into the Capability Production Document. Ensure FoS ready for and participate in System Verification Review, Functional Configuration Audit and Production Readiness Review. Develop, update and/or review program documentation in preparation for MS C.			
Title: 6) JECP - Integrated Logistics Support IPT ***Description:*** Oversee and provide supportability planning guidance to the EMD contractor in addressing logistic support elements including maintenance philosophy, manpower & personnel, supply support, Tech Data, support & test equipment, training and training support. ***FY 2010 Accomplishments:*** Continued the Business Case Analysis (BCA) to determine the scope of implementing Performance Based Logistics. Continued evaluation as to whether organic or Contractor Logistics Support is the most effective approach. Began an analysis to identify surge requirements and industries ability to support. Initiated researching Depot Source of Repair. Drafted a Maintenance Concept, Item Unique Identification Plan and System Manpower and Personnel Integration Management Plan. Monitored Contractor logistics efforts and delivered documents. Provided information to support the Joint Independent Logistics Assessment (JILA). ***FY 2011 Plans:*** Complete the analysis to identify surge requirements and industries ability to support. Report out at MS C the results of the BCA and surge requirements analysis. Draft Materiel Fielding Plan. Ensure FoS ready for and participate in CDR. Participate in	0.641	0.775	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CO5: *COLLECTIVE PROTECTION (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Configuration Control Board as necessary. Provide information to support the JILA. Begin development of Navy Training System Plan. ***FY 2012 Plans:*** Develop, update and/or review program documentation in preparation for MS C. Draft material fielding plan. Provide support for Government system level DT, including coordination of first increment of Logistics/Manpower Personnel Integration Demonstration. Ensure FoS ready for and participate in System Verification Review, Functional Configuration Audit and Production Readiness Review. Provide information to support the JILA. Complete Navy Training System Plan.			
Title: 7) JECP - Program Management and Contract Administration ***Description:*** Oversee the day-to-day program execution including guidance and direction to the JECP IPTs, financial management and tracking, budget preparation, schedule planning and monitoring, and JPEO-CBD/JPM-ColPro reporting requirements including but not limited to weekly highlight reports, monthly Acquisition Status Reports and quarterly program review briefs. Perform EMD contract management and administration. ***FY 2010 Accomplishments:*** Focused on monitoring detailed design activities including Configuration Management, User demonstration day and trade studies review, Integrated Baseline Review, In-process Review, Critical Design Review preparation, Government component level DT and Contractor system level DT prototype manufacturing and testing. ***FY 2011 Plans:*** Focus on Contractor system level DT, CDR and CDR Assessment, and Government system level DT prototypes and testing. ***FY 2012 Plans:*** Focus on System Verification Review, Functional Configuration Audit and Production Readiness Review and MS C planning and preparation.	1.227	1.250	1.228
Title: 8) JECP - Program Management ***Description:*** Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2010 Accomplishments:*** Provided strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:***	1.645	3.075	1.936

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2012 Plans:*** Provide strategic tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.			
Accomplishments/Planned Programs Subtotals	11.847	18.459	11.307

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JN0014: *COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BKFT)*	11.963	5.869	0.000		0.000	0.000	0.000	0.000	0.000	0.000	17.832
• JP0911: *CP FIELD HOSPITALS (CPFH)*	10.265	1.929	3.423		3.423	1.505	0.000	0.000	0.000	0.000	17.122
• JP1111: *JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)*	0.000	0.000	0.000		0.000	0.000	4.003	36.523	35.560	Continuing	Continuing
• R12301: *CB PROTECTIVE SHELTER (CBPS)*	10.608	19.744	5.991		5.991	5.990	19.716	22.573	23.811	Continuing	Continuing

D. Acquisition Strategy

JECP

Strategy based on evolutionary development in consonance with the Joint Requirements Office (JRO)/User developed capability documents. During the Pre-MS A Concept Refinement Phase, conducted a tailored Analysis of Alternatives (AoA) leveraging the market survey, test results and lessons learned from the FY05 ColPro Technology Readiness Evaluation (TRE). During the Technology Development Phase following MS A, technology demonstrations were conducted to mitigate risk and identify affordable mature technologies that individually or together meet the Warfighters needs. 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 Engineering and Manufacturing Development 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). Following a successful Full Rate Production (FRP) decision, award a FPIS option with five one-year ordering periods. Full and open competition will be

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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used with an updated SPS to award follow-on production contracts. Following JECP achieving Full Operational Capability, the Expeditionary Collective Protection-Enhanced Program will provide solutions to meet emerging and evolving User needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT CO5: *COLLECTIVE PROTECTION (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JECP - HW S - Prototype Development	C/CPIF	Science Applications International Corporation:San Diego, CA	8.572	2.492	Feb 2011	1.041	Feb 2012	-		1.041	0.000	12.105	0.000
		Subtotal	8.572	2.492		1.041		-		1.041	0.000	12.105	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JECP - ES S - Systems Engineering IPT	MIPR	Various:	4.085	1.153	Nov 2010	0.839	Nov 2011	-		0.839	0.000	6.077	0.000
ILS S - Integrated Logistics IPT	MIPR	Various:	1.987	0.775	Nov 2010	0.499	Nov 2011	-		0.499	0.000	3.261	0.000
		Subtotal	6.072	1.928		1.338		-		1.338	0.000	9.338	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JECP - OTHT SB - Test & Evaluation IPT	MIPR	Various:	3.983	1.127	Nov 2010	0.749	Nov 2011	-		0.749	0.000	5.859	0.000
DTE S - Prototype Performance Specification Testing	MIPR	Various:	0.322	8.587	Nov 2010	5.014	Feb 2012	-		5.014	0.000	13.923	0.000
		Subtotal	4.305	9.714		5.763		-		5.763	0.000	19.782	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JECP - PM/MS S - APMO Support	MIPR	NSWC Dahlgren:Dahlgren, VA	4.089	0.975	Nov 2010	0.948	Nov 2011	-		0.948	0.000	6.012	0.000
PM/MS S - APMO Contractor Support	C/FP	Solutions Development Corporation:Dahlgren, VA	0.546	0.275	Feb 2011	0.280	Feb 2012	-		0.280	0.000	1.101	0.000
PM/MS S - JPM-ColPro Support	MIPR	NSWC Dahlgren:Dahlgren, VA	3.043	1.387	Nov 2010	1.258	Nov 2011	-		1.258	0.000	5.688	0.000
PM/MS S - JPEO-CBD Support	MIPR	JPEO CBD:Falls Church, VA	1.932	1.688	Nov 2010	0.679	Nov 2011	-		0.679	0.000	4.299	0.000
		Subtotal	9.610	4.325		3.165		-		3.165	0.000	17.100	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	28.559	18.459		11.307		-		11.307	0.000	58.325	0.000

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** PB 2012 Chemical and Biological Defense Program		**DATE:** February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** CO5: *COLLECTIVE PROTECTION (SDD)*

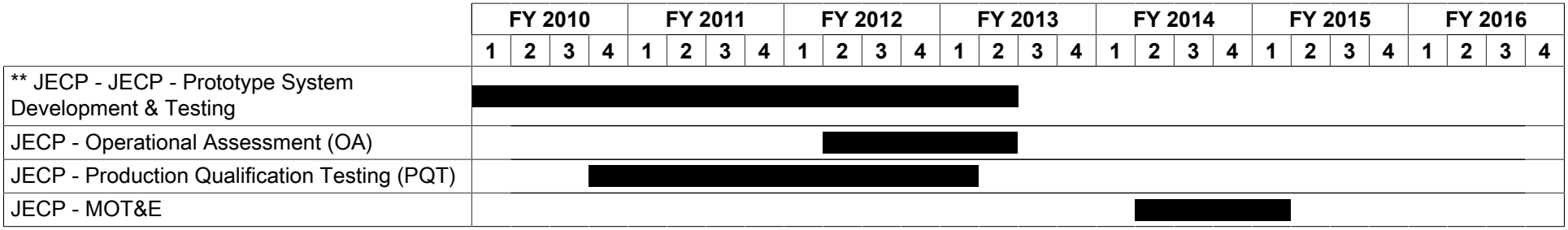

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** CO5: *COLLECTIVE PROTECTION (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JECP - JECP - Prototype System Development & Testing	1	2010	2	2013
JECP - Operational Assessment (OA)	2	2012	2	2013
JECP - Production Qualification Testing (PQT)	4	2010	1	2013
JECP - MOT&E	2	2014	1	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT DE5: *DECONTAMINATION SYSTEMS (SDD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DE5: *DECONTAMINATION SYSTEMS (SDD)*	17.195	28.499	4.370	-	4.370	9.189	27.426	22.381	12.410	Continuing	Continuing
Quantity of RDT&E Articles	11	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project funds Engineering, and Manufacturing Development (EMD) for: (1) Decontamination Competitive Prototype; (2) the Decontamination Family of Systems (DFoS); (3) Joint Platform Interior Decon (JPID); and (4) the Joint Service Sensitive Equipment Decontamination (JSSED).

The Decontamination Competitive Prototype (DC PROTO) effort will support the JPID program of record in evaluating prototype systems that will demonstrate the best decontamination technology to increase sensitive equipment and platform interior decontamination capabilities and the Joint Strike Fighter (JSF) interior/exterior decontamination requirement. DC PROTO will support the development of the JPID MS A activities and the release of the Request for Proposal (RFP) to support the JPID source selection and competitive prototyping efforts.

The Decontamination Family of Systems (DFoS) program facilitates the rapid transition of mature Science and Technology (S&T) research developments to existing Decontamination and Major Acquisition Defense Program (MDAP) Programs of Record and guides S&T community efforts toward meeting the needs of the Warfighter. Leveraging the outcomes of the Materiel Development Decision (MDD) (2QFY11) directed Analysis of Alternatives, DFoS will develop a Family of Systems, including end items/consumables which will 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/exteriors, terrain, and fixed facilities.

The Joint Platform Interior Decontamination (JPID) program will provide immediate, operational and thorough decontamination capabilities for interiors of vehicles, ships, fixed site facilities, mobile maintenance facilities, aircraft and sensitive equipment during ground/shipboard operations in hostile and non-hostile environments that have been exposed to chemical, biological, radiological and nuclear (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.

The Joint Service Sensitive Equipment Decontamination System (JSSED) program provides a thorough decontamination capability against chemical and biological warfare agents for high value or critical sensitive equipment that cannot be decontaminated using existing methods without damage. JSSED efforts will be addressed under the JPID program of record from FY11 forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) DC PROTO	-	5.484	-
FY 2011 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate DC Proto/JPID engineering, testing and logistics planning and develop program documents to support JPID program of record.			
Title: 2) DFoS ***FY 2010 Accomplishments:*** Initiated engineering, testing and logistics planning and documentation to support the evaluation of a general purpose decontaminant(s), Decon Wipes, Contamination Indicator/Decon Assurance Spray (CI/DA); conduct efficacy and material compatibility to evaluate general purpose decontaminant(s).	2.950	-	-
Title: 3) DFoS ***FY 2011 Plans:*** Conduct efficacy and deliver production representative articles/material compatibility testing/demonstrate manufacturing processes for Decon Wipes and Man Portable Decontamination System. Continue efficacy and material compatibility to evaluate general purpose decontaminants and coatings Electro-chemically generated Chlorine Dioxide (eClO2).	-	9.770	-
Title: 4) DFoS ***FY 2011 Plans:*** Conduct technology and manufacturing readiness assessments/initiate efficacy and material compatibility testing/transition Contamination Indicator/DAS technologies to DFoS.	-	1.500	-
Title: 5) DFoS ***FY 2012 Plans:*** Initiate engineering and manufacturing development phase for Reactive Skin Decontamination Lotion (RSDL) for use against NTAs	-	-	1.398
Title: 6) DFoS ***FY 2012 Plans:*** Initiate analyses, system and user testing to support Contaminated Human Remains Pouch (CHRP) Technology Readiness Assessment (TRA)	-	-	2.972
Title: 7) JPID ***FY 2011 Plans:*** Develop, validate and verify large item test capability to support JPID post chemical/biological efficacy at various temperatures.	-	5.200	-
Title: 8) JPID	-	3.291	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT DE5: *DECONTAMINATION SYSTEMS (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2011 Plans: Validate and verify large frame aircraft test capability to support JPID post test activities.			
Title: 9) JSSED ***FY 2010 Accomplishments:*** Conducted Developmental Testing (ambient chemical efficacy).	1.500	-	-
Title: 10) JSSED ***FY 2010 Accomplishments:*** Conducted engineering, testing and logistics planning and documentation to support program restructure.	4.682	-	-
Title: 11) JSSED ***FY 2010 Accomplishments:*** Fabricated 10 JSSED Prototypes (at $300 thousand each) and conducted MIL-STD810, chemical efficacy and biological efficacy testing on Engineering Test Units.	6.470	-	-
Title: 12) JSSED ***FY 2011 Plans:*** Conducted engineering, testing and logistics planning and documentation to support transition of program efforts into JPID.	-	3.254	-
Accomplishments/Planned Programs Subtotals	15.602	28.499	4.370

	FY 2010	FY 2011
Congressional Add: 1) Self Contained Automated Vehicle Washing Systems with microwave decontamination. ***FY 2010 Accomplishments:*** Congressional Interest Item - Design and develop a prototype (quantity of 1 at $1M per system each)for a Self Contained Automated Vehicle Washing System with microwave decontamination capability.	1.593	-
Congressional Adds Subtotals	1.593	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JD0050: *DECONTAMINANT SYSTEM OF SYSTEMS*	0.000	0.000	0.000		0.000	0.000	2.096	10.680	22.466	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT DE5: *DECONTAMINATION SYSTEMS (SDD)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JD0055: *JOINT SERVICE PERSONNEL/SKIN DECON SYSTEM (JSPDS)*	4.466	0.000	6.466		6.466	0.000	2.994	2.994	0.000	0.000	16.920
• JD0056: *JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)*	24.040	18.160	0.000		0.000	0.000	0.000	0.000	0.000	0.000	42.200
• JD0060: *JOINT PLATFORM INTERIOR DECON (JPID)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	6.437	Continuing	Continuing
• JD0062: *HUMAN REMAINS DECON SYSTEM (HRDS)*	0.000	3.410	0.000		0.000	0.000	0.000	0.000	0.000	0.000	3.410

D. Acquisition Strategy

DC PROTO

DC PROTO will conduct a Sources Sought in support of JPID for prototypes suitable for sensitive equipment and platform interior decontamination. The DC PROTO will integrate into the JPID program.

DFoS

The Decontamination Family of Systems (DFoS) will utilize an incremental acquisition strategy to transition various developmental technology efforts (COTS, Joint Science Technology Office (JSTO), Defense Threat Reduction Agency (DTRA) efforts, etc.) 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. The DFoS acquisition will be managed as a Family of Systems (FoS), leveraging differing technologies in each subsystem to fulfill Warfighter capability gaps. A multi-phased Analysis of Alternatives (AoA) will be conducted to identify and evaluate the operational effectiveness of potential material solutions to satisfy Service requirements. As each AoA phase is completed, individual systems and their respective phases of entry will be identified. Industry and government labs will be solicited and through competitive prototyping, materiel solutions will be down-selected for continued development and fielding as a new or enhanced joint force capability.

JPID

JPID will utilize an incremental evolutionary acquisition strategy to provide immediate, operational and thorough decontamination capabilities for interiors of vehicles, ships, fixed site facilities, mobile maintenance facilities, aircraft and sensitive equipment during ground/shipboard operations in hostile and non-hostile environments

that have been exposed to chemical, biological, radiological and nuclear (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. JPID will employ a competitive prototyping effort to facilitate the identification and evaluation of NDI and/or commercially available capabilities that can meet the JPID requirements. An RFP will be released to solicit industry for NDI/commercial technologies capable of meeting some or all of the JPID requirements using a full and open competition, best value contract strategy that may result in multiple contract awards.

JSSED

The Joint Service Sensitive Equipment Decontamination (JSSED) program awarded a single Engineering and Manufacturing Development (EMD) contract (Cost Plus Incentive Fee) with Low Rate Initial Production and Full Rate Production options (Fixed Price Successive Target) following a full and open competition RFP to meet the individual sensitive equipment requirement through incremental development. The JSSED requirement will be addressed under the JPID program of record from FY11 forward.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DC PROTO - HW C - Transition Program Efforts to JPID	C/CPIF	Teledyne Brown Engineering - Huntsville:AL	-	2.000	Feb 2011	-		-		-	Continuing	Continuing	0.000
** DFoS - SW C - Decon wipes	MIPR	RDECOM:Natick, MA	-	0.800	May 2011	-		-		-	Continuing	Continuing	0.000
HW C - Man Portable Decon System	MIPR	RDECOM:Natick, MA	-	0.835	May 2011	-		-		-	Continuing	Continuing	0.000
HW C - Contaminant Indicator/ Decon Assurance Spray	MIPR	Defense Threat Reduction Agency (DTRA):Ft. Belvoir, VA	-	0.355	May 2011	-		-		-	Continuing	Continuing	0.000
HW S - General Purpose Decontamination	C/FFP	TBD:	-	1.584	May 2011	-		-		-	Continuing	Continuing	0.000
HW C - Contaminated Human Remains Pouch (CHRP)	MIPR	TBD:	-	-		1.986	Feb 2012	-		1.986	Continuing	Continuing	0.000
HW C - Reactive Skin Decontamination Lotion (RSDL) NTA	MIPR	Defense Technical Information Center:Fort Belvoir, VA	-	-		1.398	Feb 2012	-		1.398	Continuing	Continuing	0.000
HW S - Coatings	C/FFP	TBD:	-	0.350	May 2011	-		-		-	Continuing	Continuing	0.000
** JSSED - HW C - EMD Contract/Program Transition	C/CPIF	Teledyne Brown Engineering - Huntsville:AL	-	2.603	Nov 2010	-		-		-	Continuing	Continuing	0.000
		Subtotal	-	8.527		3.384		-		3.384			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DC PROTO - ES C - Engineering, Testing and Logistics Support	MIPR	Various:	-	3.484	May 2011	-		-		-	0.000	3.484	0.000
** DFoS - ES C - Technical Support	MIPR	Various:	0.392	0.409	Feb 2011	-		-		-	0.000	0.801	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.392	3.893		-		-		-	0.000	4.285	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - DTE C - Man Portable Decon System	MIPR	TBD:	-	1.330	May 2011	-		-		-	0.000	1.330	0.000
DTE C - Decon Wipes	MIPR	TBD:	-	1.000	May 2011	-		-		-	0.000	1.000	0.000
DTE C - Contaminant Indicator/Decon Assurance Spray	MIPR	TBD:	-	1.050	May 2011	-		-		-	0.000	1.050	0.000
DTE C - Contaminated Human Remains Pouch (CHRP)	MIPR	TBD:	-	-		0.986	Feb 2012	-		0.986	0.000	0.986	0.000
DTE C - General Purpose Decon	MIPR	TBD:	-	2.420	May 2011	-		-		-	0.000	2.420	0.000
DTE C - Coatings	MIPR	TBD:	-	0.500	May 2011	-		-		-	0.000	0.500	0.000
** JPID - DTE C - Develop, validate and verify large item test capability	MIPR	Various:	-	4.000	Feb 2011	-		-		-	0.000	4.000	0.000
DTE C - Validate and verify large frame aircraft	MIPR	Various:	-	2.369	Feb 2011	-		-		-	0.000	2.369	0.000
		Subtotal	-	12.669		0.986		-		0.986	0.000	13.655	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** DFoS - PM/MS C - Integrated Product Team and Technical Support	MIPR	RDECOM:Natick, MA	1.805	0.637	Feb 2011	-		-		-	0.000	2.442	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT DE5: *DECONTAMINATION SYSTEMS (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JPID - PM/MS C - Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	-	2.122	Feb 2011	-		-		-	0.000	2.122	0.000
** JSSED - PM/MS C - Program Management Support, Integrated Product Team and Technical Support	MIPR	Various:	10.756	0.651	Feb 2011	-		-		-	0.000	11.407	0.000
		Subtotal	12.561	3.410		-		-		-	0.000	15.971	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.953	28.499		4.370		-		4.370			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT DE5: *DECONTAMINATION SYSTEMS (SDD)*

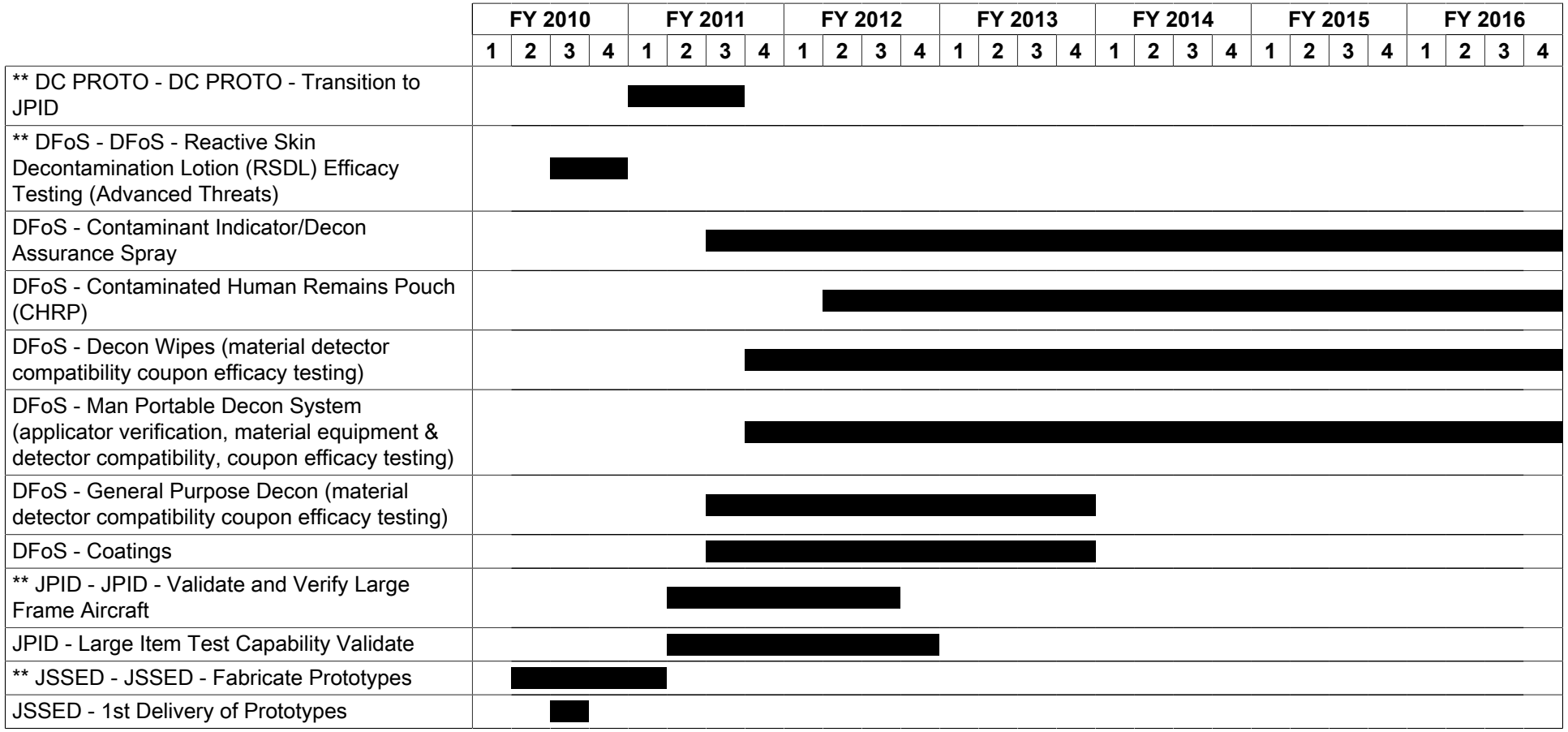

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** DE5: *DECONTAMINATION SYSTEMS (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** DC PROTO - DC PROTO - Transition to JPID	1	2011	3	2011
** DFoS - DFoS - Reactive Skin Decontamination Lotion (RSDL) Efficacy Testing (Advanced Threats)	3	2010	4	2010
DFoS - Contaminant Indicator/Decon Assurance Spray	3	2011	4	2016
DFoS - Contaminated Human Remains Pouch (CHRP)	2	2012	4	2016
DFoS - Decon Wipes (material detector compatibility coupon efficacy testing)	4	2011	4	2016
DFoS - Man Portable Decon System (applicator verification, material equipment & detector compatibility, coupon efficacy testing)	4	2011	4	2016
DFoS - General Purpose Decon (material detector compatibility coupon efficacy testing)	3	2011	4	2013
DFoS - Coatings	3	2011	4	2013
** JPID - JPID - Validate and Verify Large Frame Aircraft	2	2011	3	2012
JPID - Large Item Test Capability Validate	2	2011	4	2012
** JSSED - JSSED - Fabricate Prototypes	2	2010	1	2011
JSSED - 1st Delivery of Prototypes	3	2010	3	2010

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IP5: *INDIVIDUAL PROTECTION (SDD)*	19.848	9.678	11.490	-	11.490	11.768	1.979	0.989	1.963	Continuing	Continuing
Quantity of RDT&E Articles	256	0	0		0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project funds System Development and Demonstration (SDD) of individual protection equipment, the goal is to provide 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.

The three efforts listed below are funded in this program:

(1) The Joint Service Aircrew Mask (JSAM) is an Acquisition Category (ACAT) III Family of Systems (FoS) respiration system being incrementally developed. JSAM MPU-6 Apache Rotary Wing (RW) masks is for use with the Apache Integrated Helmet And Display Sighting System, JSAM MBU-25/26 (V)/P Fixed Wing (FW) respirator are being developed for use on limited number of U.S. Air Force Fixed Wing aircraft and the JSAM MPU-5 Rotary Wing (RW) for use in the majority of Department of Defense (DoD's) RW aircraft. 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. JSAM will be a lightweight CB protective mask that will be worn as CB protection for most Army, Air Force, Navy and Marine rotary and fixed-wing aircrew members. The JSAM (FW) will be the first and only CB protective mask in the DoD inventory that can provide anti-G protection, up to 9 times the vertical force (Gz), for aircrew in high performance aircraft. All JSAM variants will be compatible with most below-the-neck 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 provide flame and thermal protection, provide hypoxia protection to 60,000 feet, demist/emergency demist and anti-drown features. The MBU-26 (V)/P (FW) variants are being designed to be capable of being donned/doffed in flight.

(2) The Joint Service General Purpose Mask (JSGPM) funds SDD of respiratory and ocular protection technologies aimed at providing incremental upgrades for the JSGPM. Additionally, this project funds the Technology Development (TD) phase of the Advanced Respiratory Protection Initiative (ARPI) program for developing revolutionary materials, design and concepts that may be transitioned into future CB ensembles. Performance enhancements for all respiratory and ocular protection programs will be focused on increasing the protection levels of the systems from Chemical Warfare Agents (CWAs) and Toxic Industrial Chemicals (TICs) while reducing the physiological and logistical burdens.

(3) The Uniform Integrated Protection Ensemble (UIPE) program (formerly LCBE) will pursue an evolutionary incremental approach to provide capability to the Warfighter. Each increment of UIPE will provide technologies with military utility that are modular in function, and offer improvement in form and fit over current systems. The UIPE program will develop, integrate, test, procure and field systems that increase Warfighter operational performance in a CBRN environment via the use of emerging technologies and by leveraging tradespace in areas such as protection level, heat stress, durability, antimicrobial properties, launderability, self-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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detoxification, protection time, etc. Where appropriate, modeling and simulation tools will be used to lower UIPE program risks, reduce costs and ensure a high confidence in selected technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JSAM	16.014	7.269	7.919
FY 2010 Accomplishments: JSAM MPU-5 (RW) - Prepared specific mask tooling for prototypes. Completed development testing (DT). Produced MPU-5 prototypes (256 units at a cost of $4,400 each) for operational testing (OT). JSAM MBU-25/26 (V)/P (FW) - Finalized new generation design. Conducted JHMS tests. Start DT.			
FY 2011 Plans: JSAM MPU-5 (RW) - Start OT. JSAM FW - Continue DT for top four priority aircraft platforms (F-22,MC-12W,F-18 and MV-22).			
FY 2012 Plans: JSAM MPU-5 (RW) - Complete OT. Prepare documentation for full rate production (FRP). JSAM MBU-25/26 (V)/P (FW) - Complete DT for F-22,MC-12W,F-18 and MV-22 aircraft platforms. Start OT.			
Title: 2) JSGPM	1.444	2.409	-
FY 2010 Accomplishments: JSGPM (ARPI) - Conducted government testing screening. Initiated filter qualification testing on potential End of Service Life Indicator (ESLI) candidates.			
FY 2011 Plans: JSGPM (ARPI) - Conduct government testing to ensure carbons transitioned to JSGPM filters to improve TIC protection meeting the user requirements. Conduct government testing on novel filtration candidates considered for UIPE. JSGPM - Complete testing of ESLI.			
Title: 3) UIPE Increment 1	-	-	3.571
FY 2012 Plans: UIPE Incr. 1 - Conduct developmental testing (DT) efforts for UIPE Incr. 1. Assess down-selected items for UIPE Incr. 1 candidates for field and laboratory test events to evaluate performance with respect to reduction of physiological burden, protection against chemical warfare agents, and mission suitability. Complete DT. Start OT. Complete OT. Prepare milestone (MS) C documentation. Prepare for multiservice operational test and evaluation (MOT&E).			
Accomplishments/Planned Programs Subtotals	17.458	9.678	11.490

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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	FY 2010	FY 2011
Congressional Add: 1) JSAM	2.390	-
FY 2010 Accomplishments: Congressional Interest Item - JSAM Donn\Doff. Complete development of Donn \Doff capability for JSAM MBU-26(V)/P requirement.		
Congressional Adds Subtotals	2.390	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• IP7: *INDIVIDUAL PROTECTION (OP SYS DEV)*	0.000	0.000	0.000		0.000	0.000	0.494	2.467	1.470	Continuing	Continuing
• JI0002: *JS AIRCREW MASK (JSAM)*	23.045	6.964	11.853		11.853	21.223	43.717	47.598	48.368	Continuing	Continuing
• JI0003: *JOINT SERVICE GENERAL PURPOSE MASK (JSGPM/JSCESM)*	53.182	49.835	58.523		58.523	72.346	70.893	91.948	88.049	Continuing	Continuing
• JI0300: *JOINT CHEMICAL ENSEMBLE (JCE)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• MA0400: *PROTECTIVE CLOTHING (JSLIST)*	21.493	17.887	0.000		0.000	0.000	0.000	0.000	0.000	0.000	39.380

D. Acquisition Strategy

JSAM

The JSAM Acquisition Program Baseline Agreement (APBA) identifies JSAM MPU-6 Apache as the Rotary Wing (RW) Integrated Helmet and Display Sighting System (IHADSS) variant. The JSAM MPU-5 RW that is being developed for the majority of RW aircrew. JSAM MPU-6 Apache will be fielded first. Appropriate production options will be exercised.

JSGPM

JSGPM: All possible candidates will be identified through the Request For Information (RFI). The candidates will be screened against CWAs and TICs at the sorbent level. Candidates that show an indication that it may provide a performance enhancement may be transitioned into filter qualification testing. The qualification of a new filtration media for JSGPM will be based on the current JSGPM filter specification.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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JSGPM (ARPI): The Advanced Respiratory Protection Initiative (ARPI) will address improved masks protection, filter protection against TICs/TIMs and improved profile and breathing resistance; and wearability compatibility/integration. This will be accomplished by: 1) Class-Based Analysis, 2) Filtration Advanced Screening Test (FAST), Desorption Study; and Advanced CBRN Filtration efforts. Accomplishments to date include development of the prioritization approach and class based analysis; development of challenge levels for performance curve through modeling; FAST of ASZM-TDA, BSC, and EUMC against the priority TIC LIST; test of representative chemicals demonstrating the applicability of the class based analysis, and Scientific literature review of filter desorption.

UIPE

UIPE INCREMENT 1

The UIPE will use an evolutionary acquisition strategy with phased development. The UIPE will provide an operationally useful and supportable capability in as short a time as possible. Accordingly, Increment 1 of UIPE will incorporate an accelerated development cycle leveraging existing COTS technologies that will, at a minimum, provide a lightweight CB protective garment capability. Gate testing and down-selection of prototypes will comprise the initial phases of the Government's testing program. A competitively awarded contract is planned for DT and Operational Assessment (OA) will occur prior to MS C. Appropriate system requirements reviews, test readiness reviews, producibility reviews and audits will be scheduled as required prior to each milestone.

Future increments of UIPE shall be defined via separate Capability Development Document (CDDs)/Capability Production Document (CPDs) and will follow a similar path/process from MS A or MS B through MS C/FRP and will leverage preceding efforts to the greatest extent possible, maintaining commonality and synergy across all increments.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JSAM - SW SB - Contractor Development MBU- 25/26	C/FPIF	Gentex:Rancho Cucamonga, CA	12.443	0.425	Feb 2011	2.251	Feb 2012	-		2.251	Continuing	Continuing	0.000
** UIPE - HW S - UIPE 1	MIPR	Natick:Natick, MA	-	-		1.019	Nov 2011	-		1.019	Continuing	Continuing	0.000
		Subtotal	12.443	0.425		3.270		-		3.270			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JSGPM - ES C - JSGPM Filter	MIPR	ECBC:APG, MD	0.451	0.215	Nov 2010	-		-		-	0.000	0.666	0.000
ES C - JSGPM Filter	MIPR	NRL:Washington, DC	0.350	0.150	Nov 2010	-		-		-	0.000	0.500	0.000
		Subtotal	0.801	0.365		-		-		-	0.000	1.166	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JSAM - OTHT SB - Govt Dev Test	MIPR	Various:	15.663	-		1.728	Nov 2011	-		1.728	0.000	17.391	0.092
OTE S - Govt Operational Test MBU-25/26	MIPR	Various:	19.230	4.049	Feb 2011	2.610	May 2012	-		2.610	0.000	25.889	0.404
OTHT SB - Govt Operational Test MPU-5	C/FFP	AVOX:Lancaster, NY	6.354	1.980	Nov 2010	0.632	Nov 2011	-		0.632	0.000	8.966	0.185
** JSGPM - DTE SB - JSGPM Filter Testing	MIPR	Various:	3.146	1.594	Nov 2010	-		-		-	0.000	4.740	0.000
DTE SB - JSGPM Filter Testing	MIPR	NRL:Washington, DC	0.750	0.250	Nov 2010	-		-		-	0.000	1.000	0.000
** UIPE - DTE S - UIPE 1 DT	MIPR	Various:	-	-		0.653	Feb 2012	-		0.653	0.000	0.653	0.000
OTE S - UIPE 1 OT	MIPR	Various:	-	-		1.256	Feb 2012	-		1.256	0.000	1.256	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	45.143	7.873		6.879		-		6.879	0.000	59.895	0.681

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JSAM - PM/MS SB - Program Management	MIPR	Various:	18.763	0.815	Nov 2010	0.698	Nov 2011	-		0.698	0.000	20.276	5.421
** JSGPM - PM/MS C - Program Management Conduct Market Survey Analysis	MIPR	JPMO IP:Stafford, VA	0.600	0.200	Nov 2010	-		-		-	0.000	0.800	0.000
** UIPE - PM/MS C - Program Management	MIPR	JPMO IP Stafford:VA	-	-		0.643	Nov 2011	-		0.643	0.000	0.643	0.000
		Subtotal	19.363	1.015		1.341		-		1.341	0.000	21.719	5.421

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	77.750	9.678		11.490		-		11.490			6.102

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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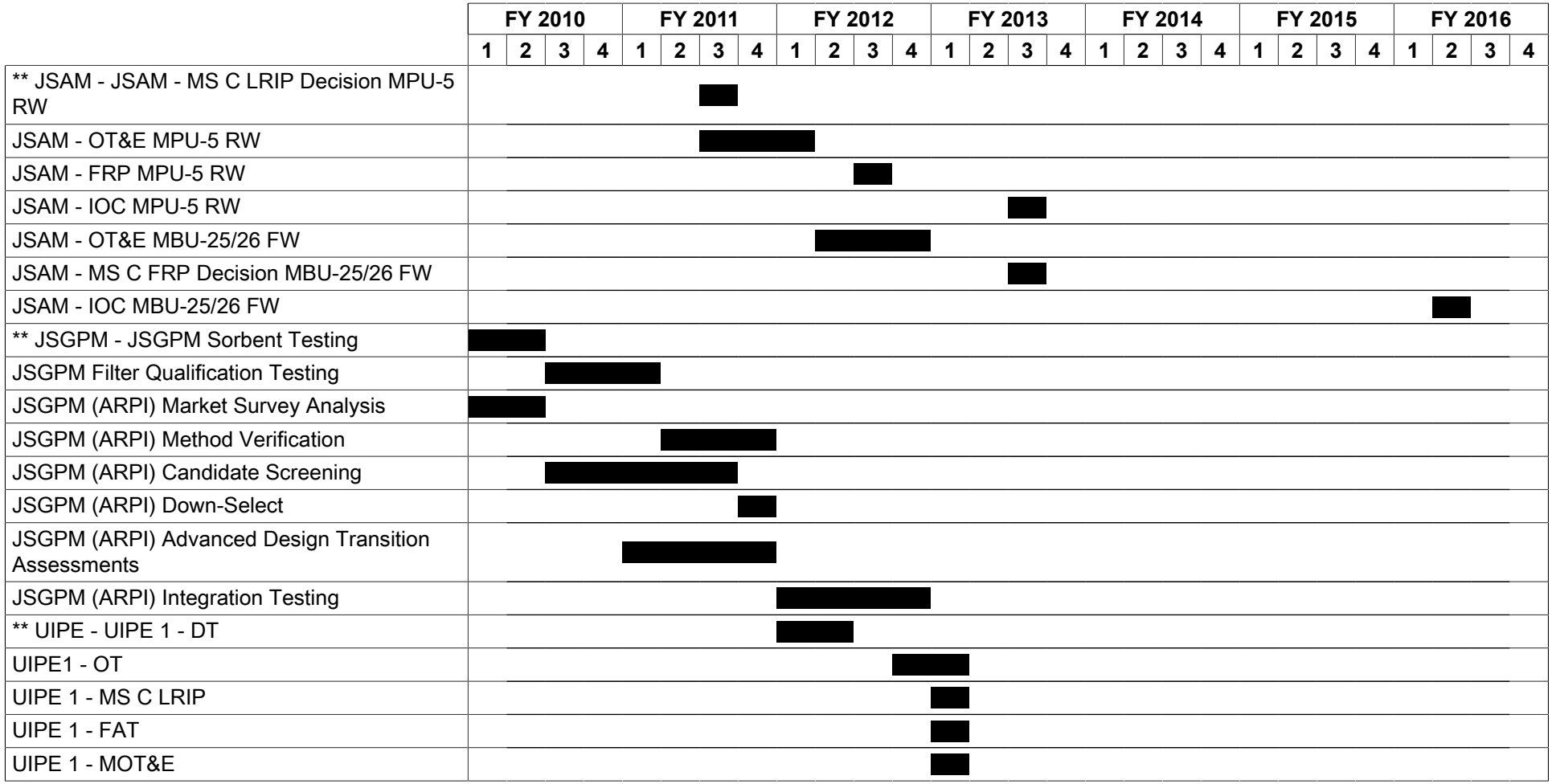

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JSAM - JSAM - MS C LRIP Decision MPU-5 RW	3	2011	3	2011
JSAM - OT&E MPU-5 RW	3	2011	1	2012
JSAM - FRP MPU-5 RW	3	2012	3	2012
JSAM - IOC MPU-5 RW	3	2013	3	2013
JSAM - OT&E MBU-25/26 FW	2	2012	4	2012
JSAM - MS C FRP Decision MBU-25/26 FW	3	2013	3	2013
JSAM - IOC MBU-25/26 FW	2	2016	2	2016
** JSGPM - JSGPM Sorbent Testing	1	2010	2	2010
JSGPM Filter Qualification Testing	3	2010	1	2011
JSGPM (ARPI) Market Survey Analysis	1	2010	2	2010
JSGPM (ARPI) Method Verification	2	2011	4	2011
JSGPM (ARPI) Candidate Screening	3	2010	3	2011
JSGPM (ARPI) Down-Select	4	2011	4	2011
JSGPM (ARPI) Advanced Design Transition Assessments	1	2011	4	2011
JSGPM (ARPI) Integration Testing	1	2012	4	2012
** UIPE - UIPE 1 - DT	1	2012	2	2012
UIPE1 - OT	4	2012	1	2013
UIPE 1 - MS C LRIP	1	2013	1	2013
UIPE 1 - FAT	1	2013	1	2013
UIPE 1 - MOT&E	1	2013	1	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IS5: *INFORMATION SYSTEMS (SDD)*	17.435	13.844	2.423	-	2.423	9.523	31.465	25.381	13.010	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This funding supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP).

Efforts funded in this project are: (1) Joint Effects Model (JEM); (2) the Joint Warning and Reporting Network (JWARN); and (3) the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) Software Support Activity (SSA).

The JEM is Department of Defense's (DoD) only accredited model 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 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 JPEO-CBD SSA is a JPEO-CBD enterprise-wide, 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

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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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JEM Operational Demonstrations and Exercises ***FY 2010 Accomplishments:*** Continued support of operational demonstrations and exercises.	0.389	-	-
Title: 2) JEM Operational Test and Evaluation/Follow-On Test and Evaluation ***FY 2010 Accomplishments:*** Continued to conduct multi-service Operational Test and Evaluation (MOT&E) and Follow-On Test and Evaluation (FOT&E).	0.574	-	-
Title: 3) JEM Systems Engineering ***FY 2010 Accomplishments:*** Continued to sustain JEM Increment 1 Systems Engineering Tasks to include software updates, configuration management, human-system integration, security analysis and DoD architecture artifact development.	0.479	-	-
Title: 4) JEM Independent Verification, Validation, and Accreditation ***FY 2010 Accomplishments:*** Conducted independent verification, validation, and accreditation of JEM software and related models. ***FY 2011 Plans:*** Continue independent verification, validation, and accreditation of JEM software and related models.	0.100	0.278	-
Title: 5) JEM Program Management ***FY 2010 Accomplishments:*** Provided program planning, financial management, contracting, schedule, and acquisition oversight support. Revised integrated master schedule, and other statutory and regulatory acquisition documents required for JEM Increment 1 Full Deployment Decision (FDD). ***FY 2011 Plans:*** Provide strategic, tactical planning, program/financial management, costing, contracting, scheduling and acquisition oversight support of fielded product all Services. Prepare and execute a follow-on Full Deployment Decision (FDD) for selected Command and Control systems.	0.828	0.233	-
Title: 6) JEM Accession of Technology Improvements	0.580	0.567	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Continued Science and Technology transition and improvement of existing JEM software. Analyzed existing and future software architectures. Continued migrating JEM software to evolving host platforms (Service C2 systems). Reviewed existing JEM internal architecture for improved performance and potential operational cost savings. ***FY 2011 Plans:*** Integrate FY10 transitioned Science and Technology technology and capabilities into JEM software. Analyze existing and future software architectures. Continue migrating JEM software to evolving host platforms (Service C2 systems). Incorporate Urban Dispersion Modeling enhancements, Missile Intercept, Backtracking to Source, enhanced STRATCOM Support, and Human Effects. Continue to review and evaluate existing JEM internal architecture for improved performance and potential operational cost savings.			
Title: 7) JEM Developmental Test and Evaluation ***FY 2010 Accomplishments:*** Performed Government Development Test (DT) on updates to the JEM and evolving baselines in support of fielding. Conducted interoperability, network and system security certifications of multiple service C4I/host systems and three computer operating systems (Windows XP, Windows 7 and UNIX). Conducted verification and validation to ensure updates to evolving baseline don't affect JEM accreditation. ***FY 2011 Plans:*** Continue to perform Governmental DT on updates to the JEM and evolving baselines in support of future User and Operational Assessments in preparation for milestone events. Verify and validate transitioned S&T code and developed models. Conduct test in support of follow-on accreditation and operational test. Initiate interoperability, network and system security certifications of multiple service C4I/host systems and three computer operating systems (Windows XP, Vista and UNIX).	0.829	0.439	-
Title: 8) JEM ***Description:*** JEM Program Development ***FY 2010 Accomplishments:*** Performed software upgrades on JEM baseline to support evolving C4I host system updates. Supported requests for special configurations of JEM (e.g. US Forces Korea (USFK), US Air Force Europe (USAFE), US National Guard Civil Support Teams (CST), Global Command and Control System (GCCS) - Joint/Army/Air Force/Maritime (J/A/AF/M). ***FY 2011 Plans:***	0.901	0.478	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue software upgrades on JEM baseline to support the evolving C4I host system updates.			
Title: 9) JWARN ***Description:*** JWARN Program Development ***FY 2010 Accomplishments:*** Performed software upgrades and updates on JWARN baseline in parallel with evolving C4I host system upgrades. Continued development of enhancements within JWARN system. Provided special configurations and training of JWARN prototype for US Forces Korea (USFK). Maintained interoperability with Global Command and Control Systems GCCS (J/A/M) for Joint Commands, Army and Marines and the Army Maneuver Control System (MCS). ***FY 2011 Plans:*** Perform software upgrades and updates on JWARN baseline in parallel with evolving Command, Control, Communications, Computers, and Intelligence (C4I) host system upgrades. Complete development and transition to modernization efforts.	2.332	7.494	-
Title: 10) JWARN ***Description:*** JWARN Operational demonstrations and tests. ***FY 2010 Accomplishments:*** Planned, conducted and supported operational demonstrations and tests for service specific Follow-on Test and Evaluation (FOT&E) events. Generated test results and reports. ***FY 2011 Plans:*** Prepare, conduct and support operational demonstrations and tests for service specific FOT&E events. Generate test results and reports.	0.647	0.284	-
Title: 11) JWARN ***Description:*** JWARN Program Management ***FY 2010 Accomplishments:*** Continued JWARN program financial management, scheduling, planning and reporting. ***FY 2011 Plans:*** Continue JWARN program financial management, scheduling, planning and reporting.	2.083	2.727	-
Title: 12) SSA Policies, Standards and Guidelines	1.649	0.216	0.244

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Provided Policies, Standards & Guidelines to IT development programs to meet emerging architecture requirements for the Service Command, Control, Communications, Computers, and Intelligence (C4I) and CBRN (CBRN) Enterprise Systems. Monitored compliance with the Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to obtain Interoperability Certification for use on services IT platforms. Continued maintenance of Enterprise Verification, Validation, and Accreditation (VV&A) guidelines and processes, including modeling and simulation (M&S) strategic support and accreditation support. ***FY 2011 Plans:*** Continue monitoring compliance with Federal Information Security Management Act (FISMA) and DoD Acquisition policies required to sustain certification on Service specific IT platforms. Update acquisition documentation for CBRN IT systems. Review and update Enterprise Verification, Validation, and Accreditation (VV&A) guidelines and processes, including M&S strategic support and accreditation support. ***FY 2012 Plans:*** 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.			
Title: 13) SSA Integrated Architecture ***FY 2010 Accomplishments:*** Used a federated approach to create a comprehensive framework of information security controls that affect the JPEO-CBD's IT Enterprise. Identified host system requirements and derived formal delivery dates for host systems. Conducted Net-Centric Assessment for programs. Maintained Common CBRN Interface standards including a Common CBRN Sensor Interface (CCSI). ***FY 2011 Plans:*** Continue documentation of CB Information Systems data flows, data requirements, services and applications as well as IT infrastructure and technical standards for host systems. Update and maintain the Integrated Architecture for JPEO-CBD Enterprise in accordance with DoDAF and industry standards. Provide Net-Centric Assessment for programs. Update Common CBRN Interface standards, including a CCSI and develop new interfaces as required. ***FY 2012 Plans:*** Continue required modifications to the Integrated Architecture for JPEO-CBD Enterprise on host platforms. Continue efforts to document CB Information Systems infrastructure and technical standards. Continue to provide Net-Centric Assessment for	1.648	0.332	0.308

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
programs. Review and update the Common CBRN Interface standards on operational systems, including a CCSI. Develop new interfaces as required.			
Title: 14) SSA Enterprise Support and Services ***FY 2010 Accomplishments:*** Facilitated the development of CBRN services that easily plug into service platforms and the Common CBRN Sensor Interface (CCSI). Provided support processes and services for Architectures, Data, Information Assurance, Help Desk, Modeling and Simulation, Science and Technology, and Standards and Policy. ***FY 2011 Plans:*** Provide support processes and services for Architectures, Data, Information Assurance, Help Desk, Modeling and Simulation, Science and Technology, and Standards and Policy. Compile performance metrics for services rendered. ***FY 2012 Plans:*** 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.	0.614	0.134	0.163
Title: 15) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model ***FY 2010 Accomplishments:*** Hosted collaborative forums to improve CBRN Data Model requirements. Developed and demonstrated CBRN data and information push to the Intel COI utilizing UCORE technology and concepts. ***FY 2011 Plans:*** Collaborate and exchange information for use in CBRN Data models. Develop CBRN data dissemination across multiple users utilizing Universal Core (UCore) concepts and technologies previously demonstrated in the UCORE Pilot. Refine CBRN data model to be used as an enterprise wide model for the CBRN Center of Excellence (COE). ***FY 2012 Plans:*** Continue to provide CBRN Data Model development for Community of Interest.	0.647	0.134	0.153
Title: 16) SSA Information Assurance ***FY 2010 Accomplishments:*** Provided System Security Management Procedures to obtain Information Assurance (IA) certification and acceptance services for developed JPEO-CBD IT programs. Ensured compliance with Information System Security (INFOSEC) Certification and Accreditation (C&A) practices related to Security Awareness and Training, Risk Management Plans and Incident Response	1.651	0.318	0.601

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Plans for JEM and JWARN. Obtained authorization to operate (ATO) annually to confirm that the IA posture of the IS remains acceptable. Validated IA controls and documented findings to maintain certification on host systems. ***FY 2011 Plans:*** Conduct reviews and maintain Authorization to Operate on host systems. Maintain situational awareness and initiate actions to improve or restore IA posture. Complete documentation required to provide Information Assurance certification and acceptance services for developing JPEO-CBD programs. ***FY 2012 Plans:*** Continue 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.			
Title: 17) SSA Policy and Standards Repository ***FY 2010 Accomplishments:*** Updated and maintained a repository for applicable Enterprise policies, standards, and guidelines. ***FY 2011 Plans:*** Review data for relevancy and update the repository for applicable Enterprise policies, standards, and guidelines. ***FY 2012 Plans:*** Update the repository for applicable Enterprise policies, standards, and guidelines.	0.697	0.140	0.359
Title: 18) SSA Technology Transition Support ***FY 2010 Accomplishments:*** Continued to provide Technology Transition support services (common components and services). ***FY 2011 Plans:*** Provide Technology Transition support services (common components and services). ***FY 2012 Plans:*** Continue to provide Technology Transition support services (common components and services).	0.787	0.070	0.595
Accomplishments/Planned Programs Subtotals	17.435	13.844	2.423

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	6.551	6.903	3.880		3.880	2.613	1.548	4.682	2.086	Continuing	Continuing
• IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	1.284	1.821	6.911		6.911	6.032	4.565	4.264	6.261	Continuing	Continuing
• JC0208: *JOINT EFFECTS MODEL (JEM)*	3.482	3.482	0.000		0.000	0.000	0.000	0.225	1.532	0.000	8.721

D. Acquisition Strategy

JEM

The Joint Effects Model (JEM) is following an evolutionary acquisition approach that will allow rapid fielding of existing technologies while further research and development (R&D) continues in order to mature the technologies required for subsequent versions of JEM. JEM is now being fielded in increments of capabilities. Each increment will retain the functionality of the preceding increment. The JEM development effort will be aligned with the evolving Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) architectures and technologies, as well as, with Service Command and Control (C2) systems. JEM will develop three distinct increments of software. JEM is a web-services based application and has been granted an Interoperability Certificate by the Joint Interoperability Test Command (JITC). The program plans to award competitive contracts using fixed price or cost-plus as appropriate.

JWARN

JWARN will develop and provide Integrated Early Warning capabilities to specified (Common Operating Environment (COE-based)) operational-level Service Command and Control (C2) systems at the Global Command and Control System (GCCS) level, extend the integration effort into the Service tactical (non COE-based) C2 systems, provide connectivity to legacy and newly developed sensors, and complete the development of JWARN.

JWARN will extend these baseline capabilities to emerging, net-centric, Service C2 systems and Service CBRN sensors and detectors as they are developed and fielded. JWARN will also ensure CBRN warning and reporting capabilities remain synchronized with the changing demands of the Warfighter while keeping pace with evolving C2 systems and their architectures, and will further evolve by integrating next generation sensors, detectors and emerging Medical and Biological Surveillance requirements into the CBRN Enterprise.

SSA

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The JPEO-CBD Software Support Activity (SSA) is a JPEO-CBD user support organization spanning and supporting all Joint Project Managers (JPMs) and JPEO-CBD Directorates. The SSA provides enterprise-wide services and coordination across all JPEO-CBD Programs of Record (PORs) 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) across the JPEO and all JPMs.

Phase 1a identifies JPEO-CBD JPMs and programs that deal with data or software, and have an IT component. This will be followed by coordination with the JPMs and programs 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 1b established management and control measures for tracking and reporting progress of the various elements described in Phases 1 and 2. This includes establishing, tracking, and performing configuration management of inventories and databases of IT systems and their states of interoperability and information assurance compliance. (BA6 - RDT&E Management Support).

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JWARN - SW S - JWARN System Development and Demonstration	C/CPAF	Northrop Grumman:Winterpark, FL	9.203	7.494	Feb 2011	-		-		-	Continuing	Continuing	0.000
** SSA - HW S - Product Development	MIPR	SPAWAR Systems Center:San Diego, CA	4.950	0.468	Nov 2010	1.350	Nov 2011	-		1.350	Continuing	Continuing	0.000
		Subtotal	14.153	7.962		1.350		-		1.350			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - ES S - IPT - System Engineering, Logistics and Program Support	MIPR	Various:	15.809	0.432	Feb 2011	-		-		-	0.000	16.241	0.000
** SSA - ES S - Support Costs	MIPR	SPAWAR Systems Center:San Diego, CA	6.121	0.682	Nov 2010	0.549	Nov 2011	-		0.549	0.000	7.352	0.000
		Subtotal	21.930	1.114		0.549		-		0.549	0.000	23.593	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - DTE SB - Hazard Prediction Model Development Test	MIPR	Various:	7.410	0.346	Feb 2011	-		-		-	0.000	7.756	0.000
OTE S - Hazard Prediction Model Developmental Test	MIPR	Various:	5.257	0.984	Feb 2011	-		-		-	0.000	6.241	0.000
** JWARN - OTHT SB - JWARN	MIPR	Various:	16.196	0.284	Feb 2011	-		-		-	1.249	17.729	0.000
** SSA - DTE S - Test and Evaluation	MIPR	SPAWAR Systems Center:San Diego, CA	2.857	0.148	Nov 2010	0.321	Nov 2011	-		0.321	0.000	3.326	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	31.720	1.762		0.321		-		0.321	1.249	35.052	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - PM/MS S - Program Office - Planning and Programming	MIPR	SPAWAR Systems Command:San Diego, CA	5.750	0.233	Nov 2010	-		-		-	0.826	6.809	0.000
** JWARN - PM/MS S - JWARN Management Support	C/CPAF	Various:	19.732	2.727	Feb 2011	-		-		-	2.657	25.116	0.000
** SSA - PM/MS S - Management Services	MIPR	SPAWAR Systems Center:San Diego, CA	3.281	0.046	Nov 2010	0.203	Nov 2011	-		0.203	0.000	3.530	0.000
		Subtotal	28.763	3.006		0.203		-		0.203	3.483	35.455	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011	FY 2012 Base Cost	FY 2012 Base	FY 2012 OCO Cost	FY 2012 OCO	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	96.566	13.844		2.423		-		2.423			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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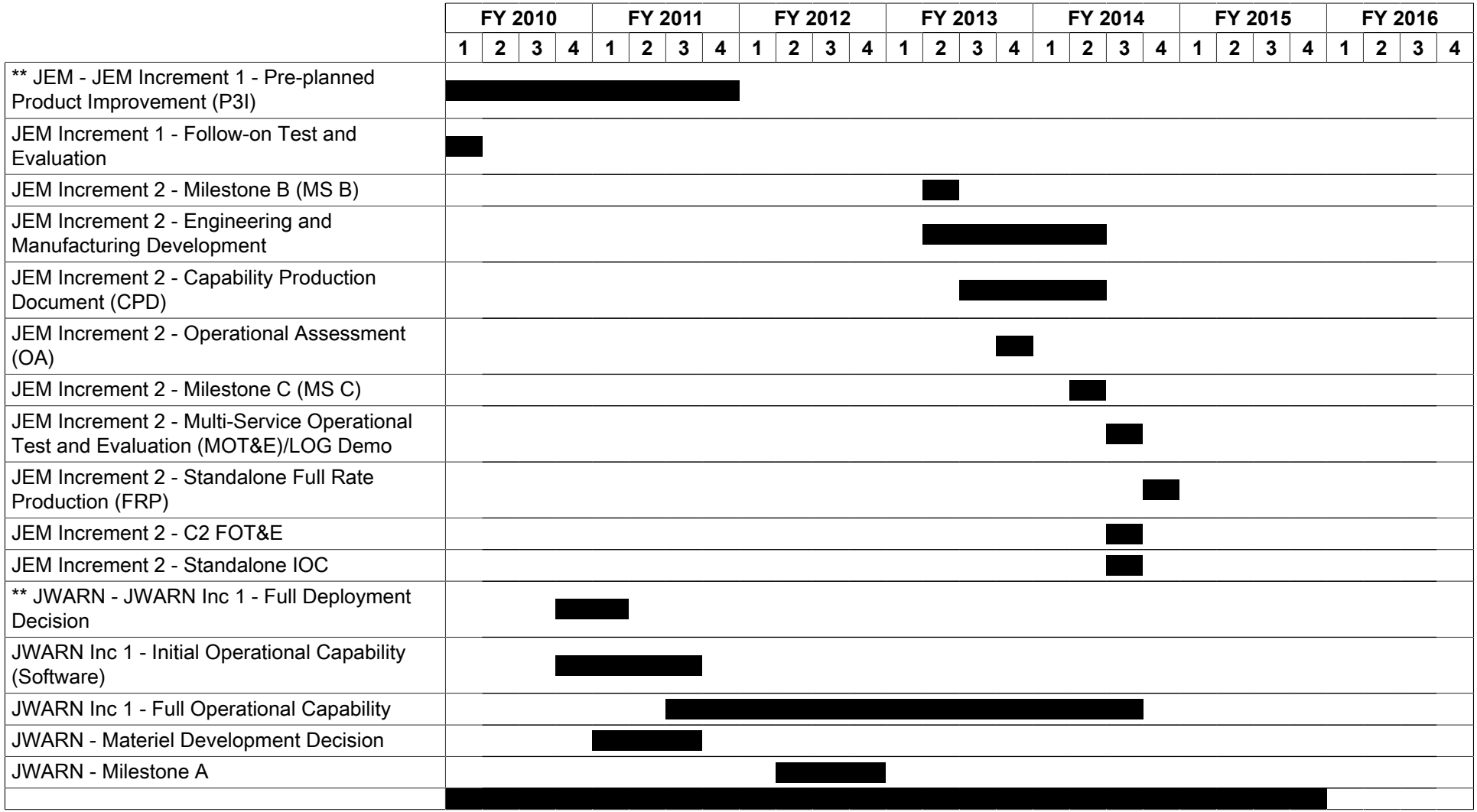

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
** SSA - SSA - Sustain Common Components products, process and services																												

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JEM - JEM Increment 1 - Pre-planned Product Improvement (P3I)	1	2010	4	2011
JEM Increment 1 - Follow-on Test and Evaluation	1	2010	1	2010
JEM Increment 2 - Milestone B (MS B)	2	2013	2	2013
JEM Increment 2 - Engineering and Manufacturing Development	2	2013	2	2014
JEM Increment 2 - Capability Production Document (CPD)	3	2013	2	2014
JEM Increment 2 - Operational Assessment (OA)	4	2013	4	2013
JEM Increment 2 - Milestone C (MS C)	2	2014	2	2014
JEM Increment 2 - Multi-Service Operational Test and Evaluation (MOT&E)/LOG Demo	3	2014	3	2014
JEM Increment 2 - Standalone Full Rate Production (FRP)	4	2014	4	2014
JEM Increment 2 - C2 FOT&E	3	2014	3	2014
JEM Increment 2 - Standalone IOC	3	2014	3	2014
** JWARN - JWARN Inc 1 - Full Deployment Decision	4	2010	1	2011
JWARN Inc 1 - Initial Operational Capability (Software)	4	2010	3	2011
JWARN Inc 1 - Full Operational Capability	3	2011	3	2014
JWARN - Materiel Development Decision	1	2011	3	2011
JWARN - Milestone A	2	2012	4	2012
** SSA - SSA - Sustain Common Components products, process and services	1	2010	4	2015

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	57.563	141.680	272.345	-	272.345	259.039	354.900	331.308	310.104	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project (MB5) provides Engineering and Manufacturing Development (EMD) for efforts (post Milestone B), which provide a rapid response capability from identification of pathogens to the delivery of medical countermeasures. Specifically, this project includes: the Medical Countermeasures Initiative (MCMI), efforts in support of biosurveillance, the Transformational Medical Technology (TMT) program, the Joint Vaccine Acquisition Program (JVAP), which includes vaccines for Recombinant Botulinum A/B and Plague, and the efforts to store and conduct required testing on Investigational New Drug (IND) vaccines used to investigate protection of lab workers in the Special Immunization Program (SIP).

This project funds the development of reagents, assays, and diagnostic equipment for biological warfare agents (BWA) and expands chemical and biological detection capabilities. It's primary mission is enhancing information sharing across the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) enterprise and amongst 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 Countermeasures Initiative (MCMI) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, based on public-private parternship agreements 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 in the advanced development component would be in two areas: 1) further maturation of novel platform/expression systems and integration into a production process, and 2) establishment of a Technical Center of Excellence (TCE) comprised of an advanced development and flexible manufacturing capability. MCMI MB5 efforts will focus on establishing and maintaining an advanced development and flexible manufacturing capability including, but not limited to, fermentation manufacturing processes, cell culture manufacturing processes, and plant based manufacturing processes.

In addition, three major 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 the Critical Reagents Program (CRP), Joint Biological Agent Identification and Diagnostic System (JBAIDS), and the 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 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.

The Next Generation Diagnostic System (NGDS) will develop and field a common medical test equipment and diagnostic platform among all Military Services. NGDS Increment 1 Commercial Off The Shelf (COTS) will identify traditional, enhanced, emerging and advanced threats (i.e., biowarfare, infectious disease, engineered threats). A multi-incremental configuration, evolutionary development and fielding approach is proposed which will provide expanded capability for an early warning tool of health threats, early detection of health events, and overall situational awareness. NGDS Increment 1 (COTS) is composed of platform test equipment hardware, assay test kits, point of care assays, and protocols for sample preparation. System operation will be for use in laboratories and potentially point of care environments. A COTS system will be procured to meet this requirement for Increment 1. The COTS system will be configured to support forward medical operations for force health protection. The NGDS program will support quality assurance efforts, Food and Drug Administration (FDA) current Good Manufacturing Practices (cGMP), engineering, integration, and FDA clearance.

The Transformational Medical Technologies Program (TMT) was launched to respond to the threat of emerging or intentionally bioengineered 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 by developing broad spectrum (multi-agent) therapeutics against biological warfare (BW) agents (e.g. one drug that treats multiple agents). The development of broad spectrum therapeutics involves developing a capability to treat exposure to biological weapons. Beginning in FY12, TMT has been separated into four product lines. These lines are Hemorrhagic Fever Virus (HFV) Medical Countermeasures (MCMs) (e.g., Ebola virus), Intracellular Bacterial Pathogen (IBP) MCMs (e.g., Tularemia), Emerging Infectious Disease (EID) MCMs and Platform Technologies. HFV, IBP and EID MCM efforts are further classified as host-directed therapeutics (e.g, drugs that target common pathways within a human to prevent or treat a variety of diseases) or pathogen-directed therapeutics (e.g. drugs that attack a common pathway found in multiple threat agents). Attrition is high throughout the drug development process, less than 10% of all preclinical compounds become an approved drug. Causes for attrition include scientific failures, Food and Drug Administration (FDA) rejection at major milestone reviews, and loss through down-selection at DoD Milestone Decision points. The development of medical countermeasures is an arduous process that requires extensive interaction with the FDA, from pre-clinical research to safety tests in human subjects (Phase 1 clinical studies), efficacy tests in humans/animals (Phase 2 clinical studies or pivotal animal efficacy studies), and expanded safety or efficacy studies (Phase 3 clinical studies), which culminate with a request to the FDA to approve, market, and produce a drug. This interaction between the Department of Defense (DoD) and the FDA results in a coordinated, unified, and safe effort. 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 Discovery, Countermeasure Evaluation, and Bioinfomatics.

The Joint Vaccine Acquisition Program (JVAP) provides for the EMD phase 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. Efforts for medical biological defense product development involve production scale-up studies and validation, non-clinical studies, consistency manufacturing, 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

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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". Upon FDA licensure, the product will transition to full-scale licensed production. Products under development in this budget item include Recombinant Botulinum A/B and Plague vaccines.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) CRP	1.158	2.177	1.980
FY 2010 Accomplishments: Continued development/expansion of biological select agents reference materials to known and emerging threats.			
FY 2011 Plans: Continue development/expansion of biological select agents reference materials to known and emerging threats.			
FY 2012 Plans: Continue development/expansion of biological select agents reference materials to known and emerging threats.			
Title: 2) CRP	0.679	1.000	1.190
FY 2010 Accomplishments: Continued development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.			
FY 2011 Plans: Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.			
FY 2012 Plans: Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.			
Title: 3) CRP	2.206	0.640	0.690
FY 2010 Accomplishments: Continued quality assurance (QA)/quality control (QC) testing to encompass the transition and fielding of biological detection assays.			
FY 2011 Plans: Continue QA/QC testing to encompass the transition and fielding of biological detection assays.			
FY 2012 Plans: Continue QA/QC testing to encompass the transition and fielding of biological detection assays.			
Title: 4) CRP	0.312	0.889	0.890
FY 2010 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Completed implementation plan and achieved ISO certification. ***FY 2011 Plans:*** Continue to maintain ISO certification. ***FY 2012 Plans:*** Continue to maintain ISO certification.			
Title: 5) CRP ***FY 2010 Accomplishments:*** Biosurveillance - Initiated development and integration of medical surveillance enhancement tools that facilitate surveillance and sensor/detector/diagnostic information exchange. ***FY 2012 Plans:*** Biosurveillance - Continue development and integration of medical surveillance enhancement tools that facilitate surveillance and sensor/detector/diagnostic information exchange.	1.375	-	1.335
Title: 6) CRP ***FY 2010 Accomplishments:*** Biosurveillance - Initiated host nation surveillance assessments that identify public health threats and capabilities in countries where US forces are present. ***FY 2012 Plans:*** Biosurveillance - Continue host nation surveillance assessments that identify public health threats and capabilities in countries where US forces are present and deploy threat assessment tools.	3.025	-	3.007
Title: 7) MCMI ***FY 2012 Plans:*** Initiate and maintain an advanced development and manufacturing capability efforts to include qualifying and validating the manufacturing equipment, utilities and environmental controls, waste management, quality control laboratory, computer systems/ programs, quality systems and procedures, and personnel training.	-	-	60.272
Title: 8) MCMI ***FY 2012 Plans:***	-	-	29.271

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate and maintain a fermentation component designed for production of vaccines and other biologics from recombinant microorganisms that will be staffed for the manufacture, test, and release of these products.			
Title: 9) MCMI ***FY 2012 Plans:*** Initiate and maintain a cell culture component with a bioreactor capacity designed to make cell culture products, including proteins, replication-incompetent virus, and viral-like-particles for use as vaccines. This facility will be staffed to manufacture, test, and release bulk product.	-	-	28.767
Title: 10) MCMI ***FY 2012 Plans:*** Initiate and maintain a plant based component designed for production of vaccines and other biologics from recombinant plant based systems that will be staffed for the manufacture, test, and release of these products.	-	-	28.860
Title: 11) MCMI ***FY 2012 Plans:*** Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	-	-	4.500
Title: 12) NGDS Increment 1 ***FY 2012 Plans:*** Initiate and complete fly-off of candidate prototypes.	-	-	2.995
Title: 13) NGDS Increment 1 ***FY 2012 Plans:*** Initiate Other Test Agencies (OTS) and Director, Office of Test and Evaluation (DOT&E) oversight support.	-	-	0.450
Title: 14) NGDS Increment 1 ***FY 2012 Plans:*** Initiate analysis of alternatives of Increment 1 Commercial Off The Shelf (COTS) candidates.	-	-	0.310
Title: 15) NGDS Increment 1 ***FY 2012 Plans:***	-	-	1.238

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate additional Food and Drug Administration (FDA) clearance for assays on Increment 1 COTS, and connectivity of select candidate(s).			
Title: 16) TMT/HFV ***Description:*** Activities during this phase will include Phase 2 Pivotal Animal Efficacy Studies, which will test the efficacy of therapeutics. Because the therapeutics sought are for biological warfare (BW) indications, efficacy testing on humans cannot be performed and will be tested in animals only. Because of the lack of human efficacy data, trials in animals are considered to be "Pivotal Animal Efficacy Studies" and are most commonly performed on at least two species of animals, to include non-human primates. Activities will also include expanded human and animal safety and/or animal efficacy studies as directed by the Food and Drug Administration (FDA) to support a New Drug Application (NDA) submission. ***FY 2012 Plans:*** TMT/ HFV - Initiate Phase 2 pivotal animal efficacy studies and any expanded safety or efficacy studies as directed by the FDA for up to three candidate drugs following a Milestone B decision. Critical activities will include dose/schedule and administration, assay validation, and efficacy studies in animals to demonstrate a favorable impact on clinical endpoints. Final formulation and dose will be determined by these studies. Conduct additional studies as required by the FDA to ensure safety and/or efficacy requirements for NDA submission and approval.	-	-	20.062
Title: 17) TMTI ***Description:*** Broad Spectrum Medical Countermeasures: Activities during this phase will include Phase 2 clinical trials, which will test the efficacy of therapeutics. Because the therapeutics sought are for biological warfare (BW) indications, efficacy testing on humans cannot be performed and will be tested in animals only. Because of the lack of human efficacy data, trials in animals are considered to be "Pivotal Animal Efficacy Studies" and are most commonly performed on at least two species of animals, to include non-human primates. Activities will also include expanded human and animal safety and/or animal efficacy studies as directed by the Food and Drug Administration (FDA) to support a New Drug Application (NDA) submission. ***FY 2011 Plans:*** TMT - Initiate Phase 2 pivotal animal efficacy studies and any expanded safety or efficacy studies as directed by the FDA for up to three candidate drugs following review and approval of new drug candidates at Milestone B. Critical activities will include dose/schedule and administration, assay validation, and efficacy studies in animals to demonstrate a favorable impact on clinical endpoints. Final formulation and dose will be determined by these studies. Pending discussions with the FDA, additional data	-	48.419	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
may be required beyond that collected in initial Phase I clinical studies and pivotal animal efficacy studies to satisfy safety and/or efficacy requirements for NDA submission and licensure.			
Title: 18) TMTI ***Description:*** Platform Technologies: Pathogen Characterization - Identifies and/or characterizes genetically modified or emerging pathogens. Target Identification - identifies genes or pathways within the host or pathogen that are vulnerable to countermeasure intervention. Countermeasure Discovery - provides programmable technologies to develop candidate countermeasures. Countermeasure Evaluation - evaluates the candidate countermeasures for safety, efficacy, and manufacturability. Bioinformatics - provides databases, tools, processing power, and connectivity to enable response system interoperability. Exercises will commence on the platform technologies as an integrated system to evaluate and determine their capacity to support TMT's capability goals. ***FY 2011 Plans:*** TMT - Plan and execute up to two exercises and evaluations. Data will be collected into lessons learned and analyzed with the goal of improving the integration of the platforms. Analysis will be performed to develop a timeline for the response capability. Evaluate the bioinformatics system for overall architecture, connectivity, processing capability, and user friendliness. Analyze lessons learned from each exercise and incorporate them into future exercises in order to improve countermeasure efficacy and shorten the time required to produce an approved countermeasure for an unknown or genetically modified pathogen.	-	17.229	-
Title: 19) JVAP - Recombinant Botulinum Vaccine ***FY 2010 Accomplishments:*** Continued manufacturing process validation, assay validation, cleaning validation and validation of formulation, fill and finish process for serotypes A and B. ***FY 2011 Plans:*** Continue manufacturing process validation and validation of formulation, fill and finish process for serotypes A and B. ***FY 2012 Plans:*** Complete manufacturing process validation and validation of formulation, fill and finish process for serotypes A and B. Complete manufacturing of consistency lots for serotypes A and B.	22.965	28.668	24.881
Title: 20) JVAP - Recombinant Botulinum Vaccine ***FY 2010 Accomplishments:***	2.788	5.323	4.714

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continued non-clinical testing. Initiated Phase 2 passive transfer studies. Continued requirement for safeguarding biological select agents and toxins. ***FY 2011 Plans:*** Continue non-clinical testing. Complete Phase 2 passive transfer studies. Continue requirement for safeguarding biological select agents and toxins. ***FY 2012 Plans:*** Continue non-clinical testing. Initiate reproductive toxicity testing and pivotal efficacy testing. Continue requirement for safeguarding biological select agents and toxins.			
Title: 21) JVAP - Recombinant Botulinum Vaccine ***FY 2010 Accomplishments:*** Continued Phase 2 clinical trial and selected final vaccination schedule. ***FY 2011 Plans:*** Continue Phase 2 clinical trial to evaluate safety and duration of immune response. ***FY 2012 Plans:*** Complete Phase 2 clinical trial and initiate Phase 3 clinical trial planning to evaluate expanded safety in thousands of volunteers.	4.979	2.139	1.573
Title: 22) JVAP - Plague Vaccine ***FY 2010 Accomplishments:*** Continued and completed large scale manufacturing process development.	1.453	-	-
Title: 23) JVAP - Plague Vaccine ***FY 2010 Accomplishments:*** Continued non-clinical studies, to include non-human primate dose response titration study and additional FDA required passive transfer studies. Continued requirement for safeguarding biological select agents and toxins. ***FY 2011 Plans:*** Continue non-clinical studies, to include additional FDA required passive transfer studies. Initiate non-human primate break through efficacy study. Continue requirement for safeguarding biological select agents and toxins. ***FY 2012 Plans:***	6.208	9.913	10.117

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue non-clinical studies, to include additional FDA required passive transfer studies. Continue requirement for safeguarding biological select agents and toxins. Initiate reproductive toxicity testing.			
Title: 24) JVAP - Plague Vaccine ***FY 2010 Accomplishments:*** Initiated Phase 2b clinical trial to select final vaccination schedule. ***FY 2011 Plans:*** Continue Phase 2b clinical trial to select final vaccination schedule. ***FY 2012 Plans:*** Continue Phase 2b clinical trial and initiate Phase 3 clinical trial to evaluate expanded safety in thousands of volunteers.	4.056	5.725	17.578
Title: 25) JVAP - Plague Vaccine ***FY 2010 Accomplishments:*** Continued large scale manufacturing process validation and assay validation. ***FY 2011 Plans:*** Continue large scale manufacturing process validation and assay validation. Initiate cleaning validation. ***FY 2012 Plans:*** Complete large scale manufacturing process validation, assay validation, and cleaning validation. Initiate consistency lot production.	3.471	15.260	18.630
Title: 26) JVAP - Plague Vaccine ***FY 2010 Accomplishments:*** Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contacting, scheduling, acquisition oversight and technical support. ***FY 2011 Plans:*** Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contacting, scheduling, acquisition oversight and technical support. ***FY 2012 Plans:*** Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contacting, scheduling, acquisition oversight and technical support.	2.888	4.298	6.730
Title: 27) VAC SIP	-	-	2.305

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Conduct storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program.			
Accomplishments/Planned Programs Subtotals	57.563	141.680	272.345

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JM0001: *JOINT BIO AGENT IDENT AND DIAG SYSTEM (JBAIDS)*	0.000	5.571	0.000		0.000	0.000	0.000	0.000	0.000	0.000	5.571
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT*	12.701	12.824	0.180		0.180	4.425	4.425	28.539	25.744	Continuing	Continuing
• JX0210: *CRITICAL REAGENTS PROGRAM (CRP)*	0.000	0.994	0.998		0.998	0.999	0.998	0.997	0.991	Continuing	Continuing
• MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	95.483	136.975	137.653		137.653	150.128	167.604	133.589	119.626	Continuing	Continuing

D. Acquisition Strategy

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.

MCMI

MCM products will be developed by the private sector, academia and the government and transitioned to the Technical Center of Excellence (TCE) for manufacture as product maturity aligns with readiness of the facility and its operating structure. Rights to Intellectual Property will be required for subsequent advanced development and manufacturing (Government Purpose Rights). The Government intends to partner with multiple private companies and educational institutions. The TCE establishment will be formalized by competitively entering into an agreement under Other Transaction Authority (OTA) that is expected to allow the sharing of costs to meet objectives, and provide the availability of excess capacity. Innovative incentive provisions and cost sharing arrangements will be explored via interaction with industry through a Request For Information (RFI), industry day(s) and a Draft Request For Proposal (RFP) prior to release of the final solicitation.

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NGDS

The Next Generation Diagnostic System (NGDS) is an incremental, evolutionary development program. Increment 1 will be a rapid fielding effort to deliver the best Commercial Off-the-Shelf (COTS) capability to identify traditional, enhanced, emerging and advanced threats. NGDS Increment 1 development will focus on planning, performance, process, and innovative solutions (P3I) improvements to the fielded COTS device, to include new assays hosted on the NGDS fielded COTS platform. The strategy also includes NGDS Increment I connectivity to aspects of the DoD's Global Information Grid, and DoD's medical health care data base systems (e.g., Joint Warning and Reporting Network, Medical Situational Awareness in Theater, Armed Forces Health Longitudinal Technology Application, etc.) From a revolutionary standpoint, NGDS will annually evaluate new technologies in the diagnostic device area (e.g. Portable Sequencers, Pre-Symptomatic Markers, Metagenomics, etc.) starting in late FY12 through FY16. Increment 2 is planned to be a new diagnostics device that compliments the technology in Increment 1. NGDS Increment 2 will enter into separate Milestones from Increment 1 and will integrate into Increment 1 based on the assessed maturity. The NGDS Increment 2 Milestone A will start in 2QFY12 and run for 24-36 months.

TMT/EID FLU

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMT/HFV

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMT/IBP

The Transformational Medical Technology (TMT) Program's ultimate goal is the delivery of Food and Drug Administration (FDA)-licensed/approved prophylaxis or therapeutics to the Warfighter. TMT will reach this goal through full and open competition, soliciting drug candidates that meet or exceed the Technical Readiness Level and maturity entry criteria. The development contracts will be Cost Plus, with options aligned to drug development milestones. The final deliverable will be drug

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candidate licensure/approval. In order to execute the overall acquisition strategy, TMT will partner with elements within the DoD Chemical and Biological Defense Program, DoD agencies, DoD laboratories and other government agencies for the development of TMT products.

TMTI

The Transformational Medical Technologies Initiative (TMTI) will advance Multiagent Broad Spectrum Medical Countermeasures (MCM), or MCM candidates based on an adaptable discovery platform, at a Technology Readiness Level (TRL) 4 through the Technology Development phase. TMTI will also conduct exercises on the platform technologies and the bioinformatics system developed with science and technology funding to evaluate and determine the ability of these systems to support the TMT capability goal. Beginning in FY12 TMT will separate into four product lines. This separation will provide greater program control and granularity. Separate program lines are: Hemorrhagic Fever Virus (HFV) Medical Countermeasures (MCMs) (e.g. Ebola virus), Intracellular Bacterial Pathogen (IBP) MCMs (e.g. Tularemia), Emerging Infectious Disease (EID) MCMs (e.g. H1N1 Influenza), and Platform Technologies.

Note - In FY10 TMTI was officially redesignated the Transformational Medical Technologies (TMT) Program.

VAC BOT

A prime systems contractor will function as the "responsible head" and license holder 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 management lead for the program shifted to Joint Vaccine Acquisition Program (JVAP) at Milestone A. 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 trial (Phase 1).

During the Engineering and Manufacturing Development (EMD) phase, the JVAP prime systems contract (PSC) 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 and schedule. The Phase 3 clinical trial also is conducted during this phase to demonstrate safety in an expanded volunteer population. To evaluate efficacy, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy FDA requirements for the "Animal Rule." The Milestone C, also the Low Rate Initial Production (LRIP) decision, will be conducted after the manufacturing process has been validated and consistency lots have been produced. 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.

VAC PLG

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Chemical Biological Medical Systems (CBMS) was mitigating technical program risk in the Plague Vaccine program by temporarily supporting development of both a US vaccine candidate and a United Kingdom vaccine candidate. During the 2008 Resource Allocation Decision, the US Plague Vaccine candidate was selected for development through licensure under JVAP's Prime Systems Contract. A Project Arrangement is in place with the United Kingdom and Canada.

The management lead for the program shifted to JVAP at Milestone A. 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 trial (Phase 1).

During the Engineering and Manufacturing Development phase (EMD), the vaccine developer 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 and schedule. The Phase 3 clinical trial is also conducted during this phase to demonstrate safety in an expanded volunteer population. To evaluate efficacy, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy the requirements of the FDA's "Animal Rule." The Milestone C, also the Low Rate Initial Production (LRIP) decision, will be conducted after the manufacturing process has been validated and consistency lots have been produced. At the Milestone C, approval is granted...

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CRP - HW C - CRP - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	USAMRIID:Fort Detrick, MD & Dugway Proving Ground	8.344	1.918	Feb 2011	2.010	Feb 2012	-		2.010	Continuing	Continuing	0.000
HW C - CRP - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	RDECOM:Edgewood, MD	1.711	0.750	Feb 2011	0.770	Feb 2012	-		0.770	Continuing	Continuing	0.000
HW C - BSV - Host Nation Support	SS/FFP	NAVSEA Contract:	3.000	-		2.993	Feb 2012	-		2.993	Continuing	Continuing	0.000
HW C - BSV - Tool enhancement/sensor information exchange	MIPR	Tri-Care Management Activity (TMA):	0.785	-		0.288	Feb 2012	-		0.288	Continuing	Continuing	0.000
** MCMI - HW S - Initiate ADM capability	C/CPFF	TBD:	-	-		60.272	May 2012	-		60.272	Continuing	Continuing	0.000
HW SB - Fermentation component	C/CPFF	TBD:	-	-		29.271	May 2012	-		29.271	Continuing	Continuing	0.000
HW SB - Cell culture component	C/CPFF	TBD:	-	-		28.767	May 2012	-		28.767	Continuing	Continuing	0.000
HW SB - Plant based component	C/CPFF	TBD:	-	-		28.860	May 2012	-		28.860	Continuing	Continuing	0.000
** TMT/HFV - SW S - MCM Contract #1	C/CPIF	TBD:	-	-		9.479	May 2012	-		9.479	Continuing	Continuing	0.000
SW S - MCM Contract #2	C/CPIF	TBD:	-	-		9.479	May 2012	-		9.479	Continuing	Continuing	0.000
** TMTI - HW C - Therapeutic Development Contract#1	C/CPIF	TBD:	-	8.493	May 2011	-		-		-	Continuing	Continuing	0.000
HW C - Therapeutic Development Contract#2	C/CPIF	TBD:	-	8.493	May 2011	-		-		-	Continuing	Continuing	0.000
SW S - Technologies Contract#1	C/CPIF	TBD:	-	6.044	May 2011	-		-		-	Continuing	Continuing	0.000
** VAC BOT - HW S - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company:Frederick, MD	39.494	11.554	Feb 2011	11.069	Feb 2012	-		11.069	Continuing	Continuing	0.000
	C/CPAF		49.655	16.555	Feb 2011	23.469	Feb 2012	-		23.469	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** VAC PLG - HW S - Manufacturing, Validation, and Consistency Lot Production		DynPort Vaccine Company:Frederick, MD											
		Subtotal	102.989	53.807		206.727		-		206.727			0.000

Remarks

RDECOM - Research, Development & Engineering Command
NMRC - Naval Medical Research Center
USAMRIID - US Army Medical Research Institute of Infectious Diseases
DPG - Dugway Proving Ground

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CRP - ES C - CRP - Select Biological Threat Agent Reference Material Support	MIPR	USAMRIID:Fort Detrick, MD; RDECOM	2.049	0.309	Feb 2011	0.643	Feb 2012	-		0.643	0.000	3.001	0.000
ES C - CRP - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground:Dugway, UT	1.063	0.138	Feb 2011	0.145	Feb 2012	-		0.145	0.000	1.346	0.000
** NGDS - TD/D SB - Market Research/Road Map	SS/FFP	Johns Hopkins University:Applied Physics Lab, Laurel	-	-		0.310	Feb 2012	-		0.310	0.000	0.310	0.000
** TMTI - ES C - Regulatory Integration Contract#1	C/CPIF	TBD:	-	6.066	May 2011	-		-		-	0.000	6.066	0.000
ES C - Regulatory Integration Contract#2	C/CPIF	TBD:	-	6.071	May 2011	-		-		-	0.000	6.071	0.000
TD/D C - Technologies Contract #2	C/CPIF	TBD:	-	4.317	May 2011	-		-		-	0.000	4.317	0.000
** VAC BOT - TD/D C - Regulatory Integration	C/CPAF		4.937	1.819	Feb 2011	2.088	Feb 2012	-		2.088	0.000	8.844	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(Environmental and FDA Documentation) and Delivery System		DynPort Vaccine Company:Frederick, MD											
** VAC PLG - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company:Frederick, MD	10.401	1.418	Feb 2011	1.918	Feb 2012	-		1.918	0.000	13.737	0.000
** VAC SIP - VAC SIP - Storage, and Distribution of Vaccines	SS/FP	TBD:	-	-		2.305	Feb 2012	-		2.305	0.000	2.305	0.000
		Subtotal	18.450	20.138		7.409		-		7.409	0.000	45.997	0.000

Remarks

DTIC - Defense Technical Information Center
NMRC - Naval Medical Research Center
RDECOM - Research, Development & Engineering Command
USAMRIID - US Army Medical Research Institute of Infectious Diseases
DPG - Dugway Proving Ground

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGDS - DTE C - Test and evaluation oversight	MIPR	ATEC:OPTEVFOR, AFOTEC	-	-		0.450	Feb 2012	-		0.450	0.000	0.450	0.000
DTE C - Prototype fly-off	MIPR	Dugway Proving Ground:UT	-	-		1.498	Feb 2012	-		1.498	0.000	1.498	0.000
OTHT C - Prototype fly-off support	PO	TBD:	-	-		1.468	Feb 2012	-		1.468	0.000	1.468	0.000
** TMTI - DTE C - Phase II and III Testing Contract#1	C/CPIF	TBD:	-	9.706	May 2011	-		-		-	0.000	9.706	0.000
	C/CPIF	TBD:	-	9.706	May 2011	-		-		-	0.000	9.706	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DTE C - Phase II and III Testing Contract #2													
DTE C - Technologies Contract#3	C/CPIF	TBD:	-	6.752	May 2011	-		-		-	0.000	6.752	0.000
** VAC BOT - DTE C - Testing, Evaluation, and Clinical Trials	C/CPAF	DynPort Vaccine Company:Frederick, MD	33.326	12.479	Feb 2011	11.934	Feb 2012	-		11.934	0.000	57.739	0.000
** VAC PLG - DTE C - PLG - Clinical Trials	C/CPAF	DynPort Vaccine Company:Frederick, MD	54.106	12.500	Feb 2011	18.080	Feb 2012	-		18.080	0.000	84.686	0.000
		Subtotal	87.432	51.143		33.430		-		33.430	0.000	172.005	0.000

Remarks

DTIC - Defense Technical Information Center
NMRC - Naval Medical Research Center
RDECOM - Research, Development & Engineering Command
USAMRIID - US Army Medical Research Institute of Infectious Diseases

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** CRP - PM/MS C - Product Management Support	Allot	CBMS:Frederick, MD	1.331	0.541	Feb 2011	0.453	Feb 2012	-		0.453	0.000	2.325	0.000
PM/MS C - Product Management Support	SS/FFP	Goldbelt Raven:LLC, Frederick	4.576	0.770	May 2011	1.540	May 2012	-		1.540	0.000	6.886	0.000
PM/MS C - Chem Bio Medical Systems Office	Allot	CBMS:Frederick, MD	1.382	0.250	Aug 2011	0.250	Aug 2012	-		0.250	0.000	1.882	0.000
PM/MS C - IT, Facility and Security Support	MIPR	RDECOM:Edgewood, MD	0.246	0.030	Aug 2011	-		-		-	0.000	0.276	0.000
** MCMI - PM/MS S - Program Management Costs	MIPR	JPEO:Falls Church, VA	-	-		4.500	Feb 2012	-		4.500	0.000	4.500	0.000
	C/FFP		-	-		0.767	May 2012	-		0.767	0.000	0.767	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** NGDS - PM/MS C - NGDS - Product Management Support		Goldbelt Raven:LLC, Frederick											
PM/MS C - NGDS - Product Management Support	Allot	CBMS:Frederick, MD	-	-		0.250	Feb 2012	-		0.250	0.000	0.250	0.000
PM/MS C - NGDS - Joint Program Executive Office	Allot	CBMS:Frederick, MD	-	-		0.250	Feb 2012	-		0.250	0.000	0.250	0.000
** TMT/HFV - PM/MS S - JPEO Program Management	MIPR	JPEO:Falls Church, VA	-	-		1.104	Aug 2012	-		1.104	0.000	1.104	0.000
** VAC BOT - PM/MS S - Program Management/ Program Manager Support	Allot	JPEO:Falls Church, VA	1.000	3.000	Feb 2011	1.668	Feb 2012	-		1.668	0.000	5.668	0.000
PM/MS S - Joint Vaccine Acquisition Program Management	Allot	CBMS:Frederick, MD	5.824	2.738	Aug 2011	2.871	Feb 2012	-		2.871	0.000	11.433	0.000
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven:LLC, Frederick	4.773	1.163	May 2011	1.538	Feb 2012	-		1.538	0.000	7.474	0.000
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company:Frederick, MD	9.149	3.377	Feb 2011	-		-		-	0.000	12.526	0.000
** VAC PLG - PM/MS S - Joint Vaccine Acquisition Program Management Office	Allot	CBMS:Frederick, MD	5.754	1.577	Feb 2011	1.692	Feb 2012	-		1.692	0.000	9.023	0.000
PM/MS S - Program Management Support	Allot	JPEO:Falls Church, VA	11.051	-		4.215	Feb 2012	-		4.215	0.000	15.266	0.000
PM/MS S - Award Fee (Maximum 10.5%) #2	C/CPAF	DynPort Vaccine Company:Frederick, MD	12.290	3.146	Feb 2011	3.681	Feb 2012	-		3.681	0.000	19.117	0.000
		Subtotal	57.376	16.592		24.779		-		24.779	0.000	98.747	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	266.247	141.680		272.345		-		272.345			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

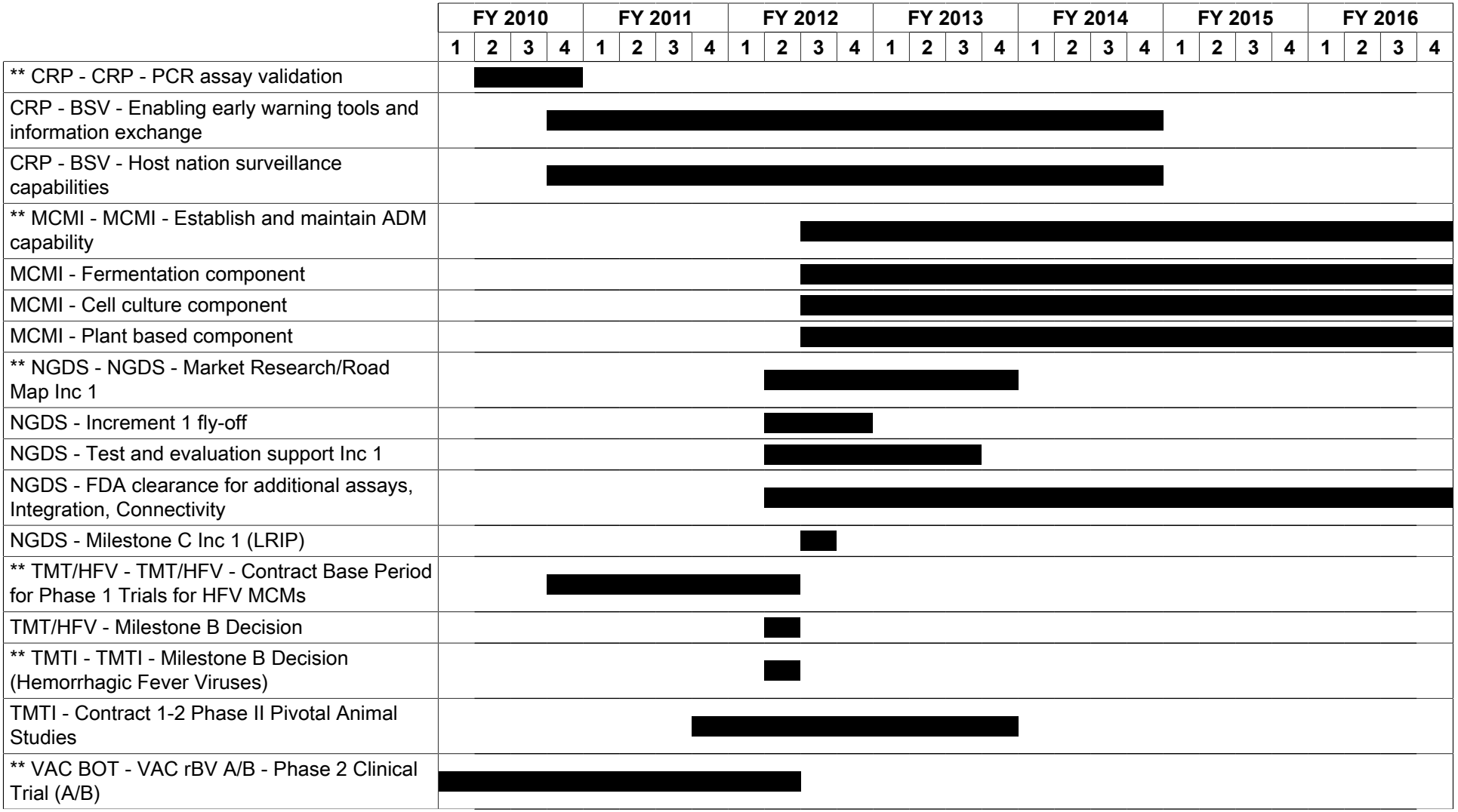

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

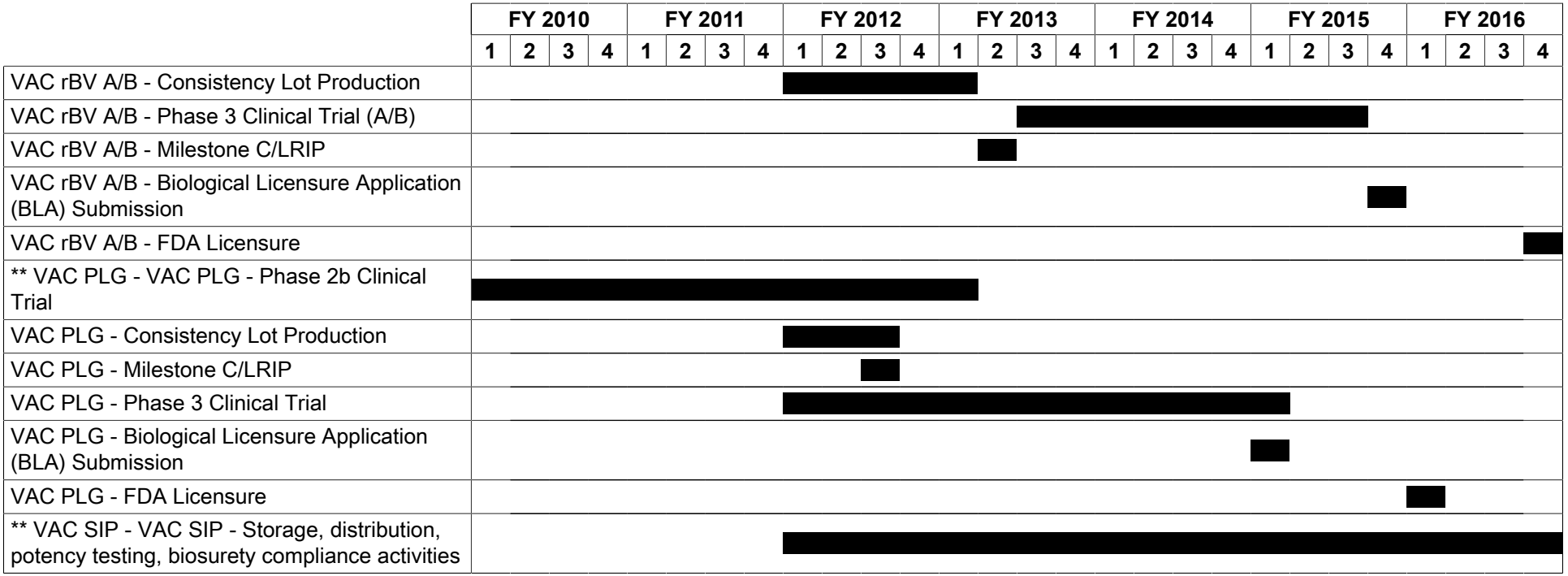

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** CRP - CRP - PCR assay validation	2	2010	4	2010
CRP - BSV - Enabling early warning tools and information exchange	4	2010	4	2014
CRP - BSV - Host nation surveillance capabilities	4	2010	4	2014
** MCMI - MCMI - Establish and maintain ADM capability	3	2012	4	2016
MCMI - Fermentation component	3	2012	4	2016
MCMI - Cell culture component	3	2012	4	2016
MCMI - Plant based component	3	2012	4	2016
** NGDS - NGDS - Market Research/Road Map Inc 1	2	2012	4	2013
NGDS - Increment 1 fly-off	2	2012	4	2012
NGDS - Test and evaluation support Inc 1	2	2012	3	2013
NGDS - FDA clearance for additional assays, Integration, Connectivity	2	2012	4	2016
NGDS - Milestone C Inc 1 (LRIP)	3	2012	3	2012
** TMT/HFV - TMT/HFV - Contract Base Period for Phase 1 Trials for HFV MCMs	4	2010	2	2012
TMT/HFV - Milestone B Decision	2	2012	2	2012
** TMTI - TMTI - Milestone B Decision (Hemorrhagic Fever Viruses)	2	2012	2	2012
TMTI - Contract 1-2 Phase II Pivotal Animal Studies	4	2011	4	2013
** VAC BOT - VAC rBV A/B - Phase 2 Clinical Trial (A/B)	1	2010	2	2012
VAC rBV A/B - Consistency Lot Production	1	2012	1	2013
VAC rBV A/B - Phase 3 Clinical Trial (A/B)	3	2013	3	2015
VAC rBV A/B - Milestone C/LRIP	2	2013	2	2013
VAC rBV A/B - Biological Licensure Application (BLA) Submission	4	2015	4	2015
VAC rBV A/B - FDA Licensure	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** MB5: *MEDICAL BIOLOGICAL DEFENSE (SDD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** VAC PLG - VAC PLG - Phase 2b Clinical Trial	1	2010	1	2013
VAC PLG - Consistency Lot Production	1	2012	3	2012
VAC PLG - Milestone C/LRIP	3	2012	3	2012
VAC PLG - Phase 3 Clinical Trial	1	2012	1	2015
VAC PLG - Biological Licensure Application (BLA) Submission	1	2015	1	2015
VAC PLG - FDA Licensure	1	2016	1	2016
** VAC SIP - VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2012	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*	4.126	51.856	26.407	-	26.407	18.860	18.396	20.824	27.289	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project provides for the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical agent threats facing U.S. forces in the field. This project supports efforts in the Engineering and Manufacturing Development (EMD) phase of the acquisition strategy for prophylactic, pre-treatment, and therapeutic drugs and diagnostic medical devices for the protection, treatment, detection and medical management of chemical warfare agent exposures. Project 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 be a replacement for the currently-fielded Convulsant Antidote for Nerve Agent (CANA) autoinjector, which uses diazepam; (2) Bioscavenger, a new capability, to be used as a prophylaxis against nerve agents; (3) Inhalation Atropine (IA), an improvement to an existing capability leveraging novel delivery, to be used to treat continuing nerve agent-induced effects after the patient has been evacuated to a medical treatment facility; (4) Improved Nerve Agent Treatment System (INATS), a replacement and improvement to an existing capability, to be used as a treatment for nerve agent intoxication and includes obtaining new indications for Pyridostigmine Bromide (PB) to be integrated with current therapeutic regimens; and (5) Pharmaceutical Post Approval and Development Support (PPADS) which provides operations and sustainment support of fielded medical countermeasure to include Soman Nerve Agent Pyridostigmine Pretreatment. Time and Temperature Indicators (TTIs), Item Unique Identification (IUID), and Radio-Frequency Identification (RFID) will be incorporated into the development effort of all medical countermeasures developed by the Medical Identification and Treatment Systems Joint Product Management Office. A TTI is a human readable tab that will provide the Warfighter immediate knowledge if the product is still useable or not. IUID and RFID labels placed medical countermeasures improve inventory management and strategic purchasing, and enable reliable visibility, and capability-based operational readiness.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) AAS	0.176	-	-
FY 2010 Accomplishments: Completed Phase 2 clinical safety studies.			
Title: 2) AAS	0.675	1.490	2.057
FY 2010 Accomplishments: Continued process development and current Good Manufacturing Practices (cGMP) requirements.			
FY 2011 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue process development and current Good Manufacturing Practices (cGMP) requirements. ***FY 2012 Plans:*** Complete process development and current Good Manufacturing Practices (cGMP) requirements.			
Title: 3) AAS ***FY 2010 Accomplishments:*** Continued Good Laboratory Practices (GLP) animal efficacy studies. ***FY 2011 Plans:*** Complete Good Laboratory Practices (GLP) animal efficacy studies.	0.293	0.391	-
Title: 4) AAS ***FY 2010 Accomplishments:*** Continued preparation of New Drug Application (NDA). ***FY 2011 Plans:*** Continue preparation of New Drug Application (NDA). ***FY 2012 Plans:*** Complete preparation of New Drug Application (NDA) and submit to FDA.	1.963	0.628	0.311
Title: 5) AAS ***FY 2010 Accomplishments:*** Completed Developmental Testing/Operational Testing (DT/OT) of packaging.	0.281	-	-
Title: 6) BSCAV Increment 1 ***FY 2011 Plans:*** Initiate manufacturing and process qualification at small scale to support delivery of a capability for a limited user group. ***FY 2012 Plans:*** Continue manufacturing and process qualification at small scale to support delivery of a capability for a limited user group. Initiate process scale-up (NTA).	-	4.133	7.900
Title: 7) BSCAV Increment 1 ***Description:*** NTA	-	9.000	5.235

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2011 Plans: Initiate process development and non-clinical safety and efficacy animal studies to demonstrate efficacy against a broad spectrum of nerve agents including non-traditional agents (NTA). ***FY 2012 Plans:*** Continue process development and non-clinical safety and efficacy animal studies to demonstrate efficacy against a broad spectrum of nerve agents including non-traditional agents (NTA).			
Title: 8) BSCAV Increment 1 ***FY 2011 Plans:*** Initiate establishment of a manufacturing contract to support delivery of a capability for a limited user group. ***FY 2012 Plans:*** Continue establishment of a manufacturing contract to support delivery of a capability for a limited user group.	-	6.200	6.504
Title: 9) BSCAV Increment 1 ***FY 2012 Plans:*** Initiate PK and efficacy bridging studies (NTA).	-	-	1.000
Title: 10) BSCAV Increment 2 ***FY 2011 Plans:*** Continue studies for alternative manufacturing technologies to support delivery of a capability for full force. ***FY 2012 Plans:*** Continue analysis of alternative manufacturing technologies to support delivery of a capability for full force.	-	6.000	3.400
Title: 11) IA ***FY 2011 Plans:*** Complete process development and current Good Manufacturing Practices (cGMP) requirements.	-	1.605	-
Title: 12) IA ***FY 2011 Plans:*** Complete formulation, analytical methods, and device optimization.	-	0.900	-
Title: 13) INATS ***FY 2011 Plans:***	-	7.300	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiate Phase 1 clinical trial.			
Title: 14) INATS ***FY 2011 Plans:*** Continue process development and Chemistry Manufacturing and Controls (CMC) efforts of the enhanced formulation to support clinical trials.	-	3.609	-
Title: 15) INATS ***Description:*** NTA ***FY 2011 Plans:*** Initiate testing of candidate oxime against non-traditional agents (NTA).	-	10.600	-
Title: 16) PPADS ***FY 2010 Accomplishments:*** Initiated and completed development of a Time Temperature Indicator (TTI) capability for Soman Nerve Agent Pre-Treatment Pyridostigmine (SNAPP) and Reactive Skin Decontamination Lotion (RSDL) packets to provide visual indicator of product reliability.	0.738	-	-
Accomplishments/Planned Programs Subtotals	4.126	51.856	26.407

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• JM6500: *INHALATIONAL ATROPINE (IA)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• JM6555: *IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	0.000	0.000		0.000	4.411	8.836	0.000	0.000	0.000	13.247

D. Acquisition Strategy

AAS

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office is managing the development of Advanced Anticonvulsant System, which consists of midazolam in an autoinjector. Midazolam, injected intramuscularly, will treat against traditional nerve agent and non-traditional agent-induced seizures and prevent subsequent neurological damage. Midazolam is more water-soluble than diazepam (the currently fielded medication to control nerve agent-induced seizures) and terminates nerve agent-induced seizures more quickly than diazepam. AAS will not eliminate the need for other protective and therapeutic systems.

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

Bioscavenger acquisition strategy uses a serial evaluation of candidates to achieve competitive prototyping in Technology Development. Initially, the Medical Identification and Treatment Systems (MITS) Joint Product Management Office (JPMO) exercised management oversight and a commercial partner as the system integrator during the Technology Development to examine a human plasma-derived butyrylcholinesterase (i.e. pBioscavenger). Activities included small scale manufacturing, conduct of pre-clinical animal safety studies, submission of an Investigational New Drug (IND) application, and completion of a Phase 1 human clinical safety study. Subsequently, the MITS JPMO evaluated a recombinant butyrylcholinesterase expressed in goat milk (i.e., rBioscavenger) and multiple small molecule candidates. The small molecule candidates were not pursued beyond initial toxicology/safety testing in animals. For rBioscavenger, activities included small scale manufacturing, conduct of pre-clinical animal safety studies, submission of an IND application, completion of a Phase 1 human clinical safety study and conduct of preliminary animal efficacy studies.

The path forward will include a formal Request For Proposal to select the Best Value for the government for a prophylaxis to support an initial limited user group requirement. Concurrently the MITS JPMO will conduct an analysis of alternative manufacturing technologies. Subsequently, a full force solution prophylaxis will be pursued, once appropriate alternate manufacturing technologies have matured. Following a successful Milestone B and entry into Engineering and Manufacturing Development (EMD), the MITS JPMO 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. Prior to FDA licensure, the 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 EMD phase will culminate in FDA licensure of the Bioscavenger. During the Production and Deployment phase, the MITS JPMO, in conjunction with a commercial partner, will pursue full rate and stockpile production and conduct any FDA-mandated post-marketing surveillance studies.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

IA

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office is managing the development of Inhalation Atropine for the Department of Defense (DoD). Inhalation Atropine is intended as a broad spectrum treatment of mild to moderate continuing symptoms of traditional nerve agent and non-traditional agent poisoning for patients within deployable and fixed medical treatment facilities. Utilizing the Chemical Biological Medical Systems Broad Agency Announcement, MITS will develop an Inhalation Atropine candidate to Technology Readiness Level 6. A contractor will serve as the product integrator and shall be responsible for conducting formulation / device optimization and feasibility demonstration activities associated with drug development in a manner consistent with Food and Drug Administration (FDA) regulations and guidelines. The DoD is coordinating with the Department of Health and Human Services (HHS) on the development of Inhalation Atropine capability in support of the Integrated National Biodefense Portfolio.

INATS

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office (JPMO) will serve as the system integrator during the Technology Development Phase and conduct formulation development, pre-clinical animal studies and Phase 1 human clinical safety studies for the candidate oxime to replace 2-pralidoxime chloride in the Antidote Treatment Nerve Agent Autoinjector (ATNAA). After Milestone B, during the Engineering and Manufacturing (EMD) Phase, the MITS JPMO and/or a commercial partner (product dependent) will serve as the system integrator to conduct Phase 2 human clinical safety, definitive animal efficacy and toxicology studies required for FDA approval. The system integrator will also develop and manufacture a product formulation and autoinjector delivery system that is stable under operationally relevant temperatures. The system integrator will submit a New Drug Application and seek FDA approval for the INATS product during the EMD Phase. During the Production and Deployment Phase, and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance studies will be conducted during the Production and Deployment Phase.

PPADS

Medical Identification and Treatment Systems (MITS) and/or a commercial partner will serve as the systems integrator for efforts that may include Large-scale production, packaging issues, time-temperature indicator (TTI) testing, individual unique identification (IUID) implementation and any FDA mandated post-marketing testing and surveillance for FDA approved products in the Production and Deployment Phase. Products include Antidote Treatment - Nerve Agent, Autoinjector (ATNAA), Convulsant Antidote Nerve Agent (CANA), Reactive Skin Decontamination Lotion (RSDL), and Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** AAS - HW S - AAS - cGMP Manufacturing Requirements	C/CPIF	Meridian Medical Technologies:Columbia, MD	5.340	1.029	Feb 2011	1.576	Feb 2012	-		1.576	Continuing	Continuing	0.000
** BSCAV - HW S - BSCAV Inc 1 - cGMP Manufacturing	C/CPIF	TBD:	8.724	3.726	Aug 2011	4.671	May 2012	-		4.671	Continuing	Continuing	0.000
** IA - HW S - cGMP Manufacturing requirements	C/CPIF	TBD:	-	0.945	May 2011	-		-		-	Continuing	Continuing	0.000
** INATS - HW S - INATS - NTA Study	C/CPIF	Defense Technical Information Center:Edgewood, MD (Battelle)	-	10.496	May 2011	-		-		-	Continuing	Continuing	0.000
HW S - Phase 1 Clinical Trial	C/CPFF	Defense Technical Information Center:Edgewood, MD (Battelle)	-	4.000	May 2011	-		-		-	Continuing	Continuing	0.000
HW S - Enhanced Formulation Development	C/CPFF	Defense Technical Information Center:Edgewood, MD (Battelle)	-	2.513	Feb 2011	-		-		-	Continuing	Continuing	0.000
		Subtotal	14.064	22.709		6.247		-		6.247			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** AAS - ES S - AAS - Regulatory Integration and NDA Support Efforts	C/CPIF	Meridian Medical Technologies:Columbia, MD	1.822	0.391	Feb 2011	0.311	Feb 2012	-		0.311	0.000	2.524	0.000
** BSCAV - ES S - BSCAV Inc 1 - Contract Support Efforts	C/CPIF	TBD:	-	2.667	Feb 2011	1.850	May 2012	-		1.850	0.000	4.517	0.000
** IA - ES S - Regulatory Integration and NDA support efforts	C/CPIF	TBD:	-	0.390	May 2011	-		-		-	0.000	0.390	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** INATS - ES S - INATS - Regulatory Integration and IND Support Efforts	C/CPIF	Defense Technical Information Center:Edgewood, MD (Battelle)	-	1.000	Feb 2011	-		-		-	0.000	1.000	0.000
		Subtotal	1.822	4.448		2.161		-		2.161	0.000	8.431	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** AAS - DTE S - AAS - GLP Animal Efficacy Studies	C/CPFF	Battelle Memorial Institute:Columbus, OH	3.813	0.698	Feb 2011	-		-		-	0.000	4.511	0.000
** BSCAV - DTE S - BSCAV Inc 1 - NTA Studies	C/CPIF	TBD:	-	8.500	Aug 2011	10.900	May 2012	-		10.900	0.000	19.400	0.000
DTE S - BSCAV Inc 2 - Alternate Manufacturing Technology Studies	C/CPFF	TBD:	-	5.600	May 2011	3.400	May 2012	-		3.400	0.000	9.000	0.000
** IA - DTE S - Formulation and device development studies	C/CPIF	TBD:	-	0.780	May 2011	-		-		-	0.000	0.780	0.000
		Subtotal	3.813	15.578		14.300		-		14.300	0.000	33.691	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** AAS - PM/MS S - AAS - Product Management Support	MIPR	USAMMDA:Fort Detrick, MD	0.762	0.170	Feb 2011	0.170	Feb 2012	-		0.170	0.000	1.102	0.000
PM/MS S - AAS - Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	1.260	0.221	Feb 2011	0.311	Feb 2012	-		0.311	0.000	1.792	0.000
	SS/FFP	Goldbelt Raven:LLC, Frederick	-	1.440	Feb 2011	1.540	May 2012	-		1.540	0.000	2.980	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** BSCAV - PM/MS S - BSCAV Inc 1 - Product Management Support													
PM/MS S - BSCAV Inc 1- Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	-	0.600	May 2011	0.545	May 2012	-		0.545	0.000	1.145	0.000
PM/MS S - BSCAV Inc 2 - Joint Program Executive Office	Allot	JPEO:Falls Church, VA	-	2.600	May 2011	0.979	May 2012	-		0.979	0.000	3.579	0.000
PM/MS S - USAMMDA, Fort Detrick, MD	Allot	USAMMDA:Fort Detrick, MD	-	0.200	May 2011	0.154	May 2012	-		0.154	0.000	0.354	0.000
** IA - PM/MS S - IA - Management Support	Allot	CBMS:Frederick, MD	-	0.260	May 2011	-		-		-	0.000	0.260	0.000
PM/MS S - IA - Management Support	Allot	JPEO:Falls Church, VA	-	0.130	May 2011	-		-		-	0.000	0.130	0.000
** INATS - PM/MS S - INATS - Product Management Support	SS/FFP	Goldbelt Raven:LLC, Frederick	-	2.160	Feb 2011	-		-		-	0.000	2.160	0.000
PM/MS S - INATS - Product Management Support	MIPR	USAMMDA:Fort Detrick, MD	-	0.200	May 2011	-		-		-	0.000	0.200	0.000
PM/MS S - INATS - Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	-	0.400	Feb 2011	-		-		-	0.000	0.400	0.000
PM/MS S - INATS - Joint Program Executive Office	Allot	JPEO:Falls Church, VA	1.000	0.740	Feb 2011	-		-		-	0.000	1.740	0.000
		Subtotal	3.022	9.121		3.699		-		3.699	0.000	15.842	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	22.721	51.856		26.407		-		26.407			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

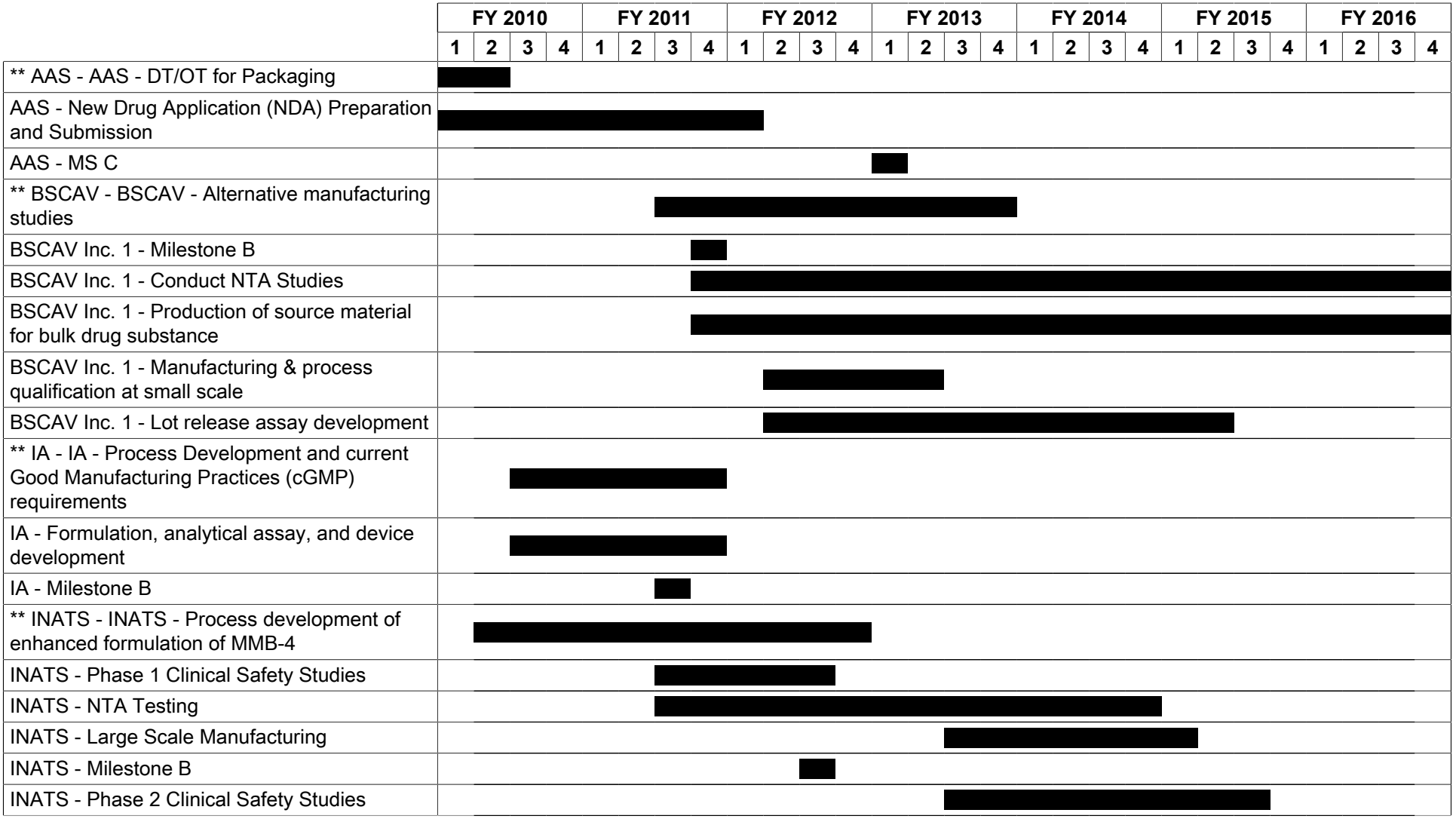

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

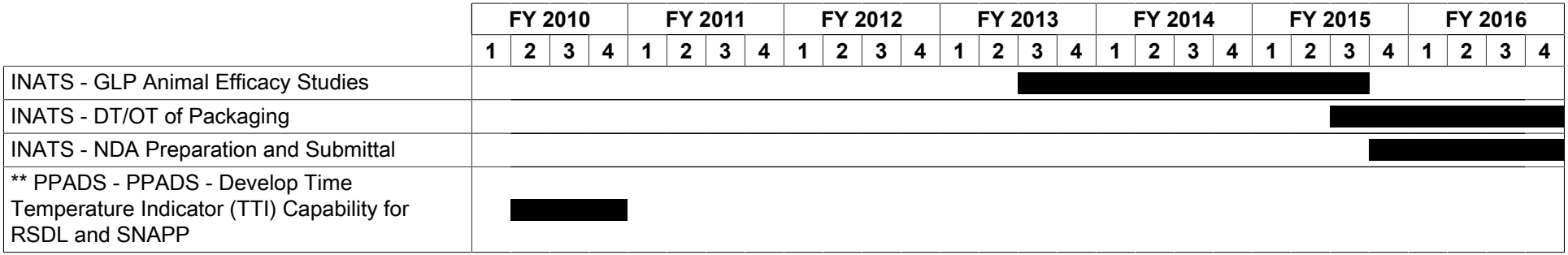

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** AAS - AAS - DT/OT for Packaging	1	2010	2	2010
AAS - New Drug Application (NDA) Preparation and Submission	1	2010	1	2012
AAS - MS C	1	2013	1	2013
** BSCAV - BSCAV - Alternative manufacturing studies	3	2011	4	2013
BSCAV Inc. 1 - Milestone B	4	2011	4	2011
BSCAV Inc. 1 - Conduct NTA Studies	4	2011	4	2016
BSCAV Inc. 1 - Production of source material for bulk drug substance	4	2011	4	2016
BSCAV Inc. 1 - Manufacturing & process qualification at small scale	2	2012	2	2013
BSCAV Inc. 1 - Lot release assay development	2	2012	2	2015
** IA - IA - Process Development and current Good Manufacturing Practices (cGMP) requirements	3	2010	4	2011
IA - Formulation, analytical assay, and device development	3	2010	4	2011
IA - Milestone B	3	2011	3	2011
** INATS - INATS - Process development of enhanced formulation of MMB-4	2	2010	4	2012
INATS - Phase 1 Clinical Safety Studies	3	2011	3	2012
INATS - NTA Testing	3	2011	4	2014
INATS - Large Scale Manufacturing	3	2013	1	2015
INATS - Milestone B	3	2012	3	2012
INATS - Phase 2 Clinical Safety Studies	3	2013	3	2015
INATS - GLP Animal Efficacy Studies	3	2013	3	2015
INATS - DT/OT of Packaging	3	2015	4	2016
INATS - NDA Preparation and Submittal	4	2015	4	2016
	2	2010	4	2010

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MC5: *MEDICAL CHEMICAL DEFENSE (SDD)*

	Start		End	
Events	Quarter	Year	Quarter	Year
** PPADS - PPADS - Develop Time Temperature Indicator (TTI) Capability for RSDL and SNAPP				

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*	-	1.143	-	-	-	-	-	-	-	0.000	1.143
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project funds the advanced development of candidate therapeutic medical countermeasures to mitigate the consequences of exposure to ionizing radiation from nuclear or radiological attacks. Exposure to ionizing radiation causes damage to blood-forming cells (hematopoietic system) and gastrointestinal system, leading to Acute Radiation Syndrome (ARS). Medical countermeasures must be approved by the Food and Drug Administration (FDA) for human use prior to fielding. Testing the efficacy of candidate drugs against lethal radiation exposure cannot be conducted in humans; therefore, surrogate animal models must be used to obtain FDA approval.

Medical Radiological Countermeasures (MRADC) efforts include multiple countermeasures required to protect U.S. Forces against injury caused by exposure to radiation and to restore casualties to pre-exposure health. MRADC shall reverse or limit radiation injury resulting in increased survival, decreased incapacity, and sustained operational effectiveness. In addition, MRADC shall be effective against a broad range of radiation sources and types and shall be useable throughout the full spectrum of healthcare operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) MRADC ***FY 2011 Plans:*** Initiate and complete pivotal animal efficacy studies.	-	0.954	-
Title: 2) MRADC ***FY 2011 Plans:*** Initiate regulatory integration and BLA support efforts.	-	0.189	-
Accomplishments/Planned Programs Subtotals	-	1.143	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

MRADC

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*

Medical Identification and Treatment Systems (MITS) Joint Product Management Office is the life-cycle manager of Medical Radiation Countermeasures (MRADC) for the Department of Defense (DoD). The DoD is working very closely with the Department of Health and Human Services (HHS), which also has a radiation countermeasure program. 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 establishment of an interagency working group provides oversight and guidance to both agency programs and allows leveraging of knowledge and successes to advance the DoD MRADC program. Under the MOU, MITS executes Interagency Agreements with the Biomedical Advanced Research and Development Authority (BARDA), HHS' advanced developer, to promote the science of MRADC.

All MRADC will be developed using a system-of-systems approach to provide a full spectrum capability to protect against the radiation threat. Individual countermeasure solutions will be developed using a single step to a full capability (FDA approval) strategy. Multiple contractors will serve as individual product integrators throughout development and will be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA). Each contractor will sponsor the drug to the FDA and hold all approvals and/or licenses. The Technology Development phase includes pre-clinical studies and Phase 1 human clinical safety studies. During the Engineering and Manufacturing Development (EMD) phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the EMD phase. During the Production and Deployment Phase, sufficient quantities of product to meet Initial Operational Capability and Full Operational Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance studies requested by the FDA will be conducted.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** MRADC - ES S - MRADC - Regulatory Integration and Support Efforts	C/CPIF	TBD:	-	0.100	Feb 2011	-		-		-	0.000	0.100	0.000
		Subtotal	-	0.100		-		-		-	0.000	0.100	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** MRADC - DTE S - MRADC - Definitive Animal Efficacy studies	C/CPIF	TBD:	-	0.843	Aug 2011	-		-		-	0.000	0.843	0.000
		Subtotal	-	0.843		-		-		-	0.000	0.843	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** MRADC - PM/MS S - MRADC - Chem Bio Medical Systems	Allot	CBMS:Frederick, MD	-	0.100	May 2011	-		-		-	0.000	0.100	0.000
PM/MS S - MRADC - Product Management Services	MIPR	USAMMDA:Ft Detrick, MD	-	0.100	Feb 2011	-		-		-	0.000	0.100	0.000
		Subtotal	-	0.200		-		-		-	0.000	0.200	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.143		-		-		-	0.000	1.143	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*

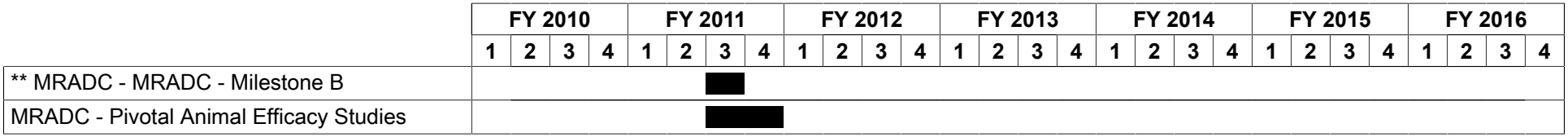

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** MR5: *MEDICAL RADIOLOGICAL DEFENSE (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** MRADC - MRADC - Milestone B	3	2011	3	2011
MRADC - Pivotal Animal Efficacy Studies	3	2011	4	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TE5: *TEST & EVALUATION (SDD)*	39.372	15.901	11.043	-	11.043	5.748	11.866	12.217	15.562	Continuing	Continuing
Quantity of RDT&E Articles											

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 four groups to include: (1) Chemical Laboratory (Sense); (2) Biological Laboratory (Sense); (3) Field Simulant Test (Sense); (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 (NTA) Test System. The Dynamic Test Chamber provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The NTA Test System provides a new capability at Edgewood Chemical Biological Center to conduct highly toxic material testing using new emerging threats. The NTA Test System supports testing of Decontamination, Collective Protection, Individual Protection, and Contamination Avoidance products. The CBD programs supported are: the Joint Chemical Agent Detector (JCAD) and Improved Point Detection System (IPDS).

(2) Sense Laboratory (Biological): The product for this area is the Whole System Live Agent Test (WSLAT) "Full System" Chamber. The WSLAT "Full System" Chamber supports testing of all biological point detection systems in production configuration in biological live agent environments. The chemical biological defense (CBD) programs supported are: the Joint Biological Point Detection System (JBPDS)/JBPDS Block II; and the Joint Biological Standoff Detection System (JBSDS) Inc. 2.

(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 simulant test capability that integrates cloud tracking equipment; meteorological equipment; and test data network.. The CBD programs supported are: the Joint Chemical Agent Detector (JCAD); Next Generation Chemical Standoff Detection (NGCSD) System; the Joint NBC Reconnaissance System (JNBCRS); and the Joint Warning and Reporting Network (JWARN).

(4) Individual Protection, Collective Protection and Decontamination (Shield and Sustain): Products for this area include: a Small Item Decontamination (SID) Chamber; Individual Protection Ensemble Mannequin System (IPEMS); and Collective Protection (ColPro) instrumentation and facilities. The Small Item Decontamination Chamber provides an enhanced ability to conduct decontamination and residual agent off-gassing testing. IPEMS provides an articulated robotic mannequin that simulates Warfighters activities and includes under ensemble agent sensing capability for evaluating IPE against chemical warfare agents. IPEMS consists of an articulated robotic mannequin, exposure chamber, control room, and real time under-ensemble sensor system. Collective Protection instrumentation and fixture upgrades provide improved test capabilities at Dugway Proving Ground, and the Edgewood Chemical Biological Center for the evaluation of entire ColPro systems, subsystems and individual components. The CBD programs supported are: Joint Protective Aircrew Ensemble (JPACE); Joint Service General Purpose Mask

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*

(JSGPM); Joint Service Aircrew Mask (JSAM) - Fixed Wing (FW), Rotary Wing (RW), and Joint Strike Fighter (JSF) variants; Joint Service Chemical Environment Survivability Mask (JSCESM); Joint Chemical Ensemble (JCE); Uniform Individual Protective Ensemble (UIPE); Joint Service Lightweight Integrated Suit Technology (JSLIST); Joint Chemical/Biological Coverall for Combat Vehicle Crewmen (JC3); Joint Material Decontamination System (JMDS) (Includes Joint Platform Interior Decontamination/Joint Service Sensitive Equipment Decontamination (JPID/JSSED)); Joint Service Transportable Decontamination System (JSTDS); Joint Expeditionary Collective Protection (JECP); and Joint Collective Protection Equipment (JCPE).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) PD TESS - Dynamic Test Chamber (DTC) ***FY 2010 Accomplishments:*** Completed verification and validation testing of the DTC.	2.691	-	-
Title: 2) PD TESS - WSLAT ***FY 2010 Accomplishments:*** Completed WSLAT design and initiated fabrication. ***FY 2011 Plans:*** Continue WSLAT build and installation. ***FY 2012 Plans:*** Conduct verification and validation testing.	8.556	1.915	1.500
Title: 3) PD TESS - Test Grid ***FY 2010 Accomplishments:*** Completed system characterization testing and operational demonstration (Op-Demo). Demonstrated capability for chemical simulant testing. Procured data network software and hardware build a wired and wireless network and demonstrated at the Op-Demo. Initiated instrumentation support and information effort. ***FY 2011 Plans:*** Prepare and conduct DoD Information Assurance Certification and Accreditation Process (DIACAP) for the Test Grid project. Insert and interface the AU9200 dissemination devices into the Test Grid network.	11.740	1.502	-
Title: 4) PD TESS - Small Item Decon (SID) ***FY 2010 Accomplishments:*** Completed verification and validation testing.	0.130	-	-
Title: 5) PD TESS - Individual Protection Ensemble Mannequin System (IPEMS) ***FY 2010 Accomplishments:***	12.720	10.891	4.224

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Initiated IPEMS and chamber system fabrication and installation. ***FY 2011 Plans:*** Complete installation and initiate verification and validation testing. ***FY 2012 Plans:*** Complete fabrication, installation, verification and validation testing.			
Title: 6) PD TESS - ColPro Upgrades ***FY 2010 Accomplishments:*** Completed fabrication, verification and validation testing of the Advanced Air Purification Test System and Mechanical Facility Test Fixture.	0.264	-	-
Title: 7) PD TESS ***FY 2010 Accomplishments:*** **Need Text** ***FY 2011 Plans:*** Initiate program management, engineering support and Integrated Product Team (IPT) support. ***FY 2012 Plans:*** Continue program management, engineering support and IPT support.	3.271	1.593	1.501
Title: 8) PD TESS - Non-Traditional Agent (NTA) Test System ***FY 2012 Plans:*** Continue fabrication and installation of the NTA Test System.	-	-	3.818
Accomplishments/Planned Programs Subtotals	39.372	15.901	11.043

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• TE7: *TEST & EVALUATION (OP SYS DEV)*	4.805	4.813	3.597		3.597	3.348	2.888	2.855	2.004	Continuing	Continuing

D. Acquisition Strategy

PD TESS

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** TE5: *TEST & EVALUATION (SDD)*

The PD TESS program provides for the development and acquisition of new and enhanced test infrastructure to support the sense, shield, shape, and sustain mission areas for the Chemical and Biological Defense Program (CBDP). The efforts are supported through competitive contract actions, academia, and other Government agencies. Infrastructure solutions will leverage commercially available systems to provide state-of-the-art capabilities that address current and future CBDP test and evaluation needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** PD TESS - HW S - WSLAT Chamber Fabrication/ Installation	C/CPFF	Teledyne Brown Engineering:Huntsville, Alabama	8.500	1.915	May 2011	1.500	Feb 2012	-		1.500	Continuing	Continuing	0.000
HW S - Test Grid Instrumentation, Data Network and C4ISR	MIPR	Dugway Proving Ground:Utah	2.047	0.177	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW S - Test Grid Instrumentation, Data Network and C4ISR #2	C/FFP	EMC2:Irvine, California	-	2.200	Feb 2011	-		-		-	Continuing	Continuing	0.000
HW S - IPE Mannequin System Fabricate/Install	C/CPFF	Midwest Research Institute:Kansas City, Missouri	31.666	10.786	Nov 2010	3.481	Nov 2011	-		3.481	Continuing	Continuing	0.000
HW S - IPEMS Design/ Fabrication/Installation	MIPR	Various:	0.554	0.105	Feb 2011	0.743	Feb 2012	-		0.743	Continuing	Continuing	0.000
HWS - NTA Test System Design/Fabrication/Installation	MIPR	Various:	-	-		0.467	Feb 2012	-		0.467	Continuing	Continuing	0.000
HW S - NTA Test System Design, Fabrication, Install	C/CPFF	Midwest Research Institute:Kansas City, Missouri	-	-		3.351	Feb 2012	-		3.351	Continuing	Continuing	0.000
		Subtotal	42.767	15.183		9.542		-		9.542			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** PD TESS - PM/MS S - Program Management/ Systems Engineering Support	MIPR	JPM NBCCA:APG, MD	3.231	0.718	Nov 2010	1.501	Nov 2011	-		1.501	0.000	5.450	0.000
		Subtotal	3.231	0.718		1.501		-		1.501	0.000	5.450	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.998	15.901		11.043		-		11.043			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	PROJECT TE5: *TEST & EVALUATION (SDD)*

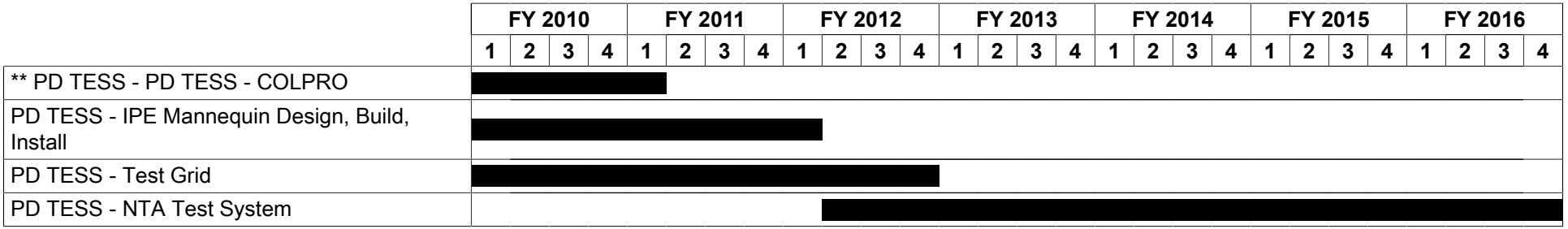

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604384BP: *CHEMICAL/BIOLOGICAL DEFENSE (SDD)*	**PROJECT** TE5: *TEST & EVALUATION (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** PD TESS - PD TESS - COLPRO	1	2010	1	2011
PD TESS - IPE Mannequin Design, Build, Install	1	2010	1	2012
PD TESS - Test Grid	1	2010	4	2012
PD TESS - NTA Test System	2	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	113.354	120.995	92.806	-	92.806	104.018	107.273	108.561	97.984	Continuing	Continuing
DT6: *JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)*	6.546	6.332	5.132	-	5.132	5.013	5.179	5.294	5.406	Continuing	Continuing
DW6: *MAJOR RANGE AND TEST FACILITY BASE (MRTFB)*	53.713	60.274	55.224	-	55.224	59.859	61.329	61.062	51.038	Continuing	Continuing
LS6: *LABORATORY SUPPORT*	10.155	18.945	0.702	-	0.702	8.774	8.800	9.210	5.405	Continuing	Continuing
MS6: *RDT&E MGT SUPPORT*	35.823	29.714	29.438	-	29.438	28.167	29.685	30.666	33.756	Continuing	Continuing
O49: *JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM*	7.117	5.730	2.310	-	2.310	2.205	2.280	2.329	2.379	Continuing	Continuing

A. Mission Description and Budget Item Justification

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

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 in accordance with the National Defense Authorization Act of 2003 (Public Law 107-314 - section 232) to ensure that DoD test customers are only charged direct costs of testing and that overhead expenses are centrally funded. It finances the required institutional test operating costs. Institutional test operating costs include institutional civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
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)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	106.033	120.995	127.666	-	127.666
Current President's Budget	113.354	120.995	92.806	-	92.806
Total Adjustments	7.321	-	-34.860	-	-34.860
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	8.777	-			
• SBIR/STTR Transfer	-1.296	-			
• Other Adjustments	-0.160	-	-34.860	-	-34.860

Change Summary Explanation

Funding: FY10 - Adjustments less than 10% of total program.

FY 12 - Program realignments to support high priority CBDP and DoD program initiatives (-$9,796K DW6; -$11,420K LS6; +4,525K MS6; -$2,488K O49); Economic assumptions (-$7K DT6; -$85K DW6; -$46K MS6; -$4K O49); directed efficiencies (-$8,000K LS6); and reductions to Service Support Contracts in support of the DoD Efficiency Initiatives (-$408K DT6; -$2,204K DW6; -$4,752K MS6; -$175K O49).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT DT6: *JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DT6: *JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)*	6.546	6.332	5.132	-	5.132	5.013	5.179	5.294	5.406	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The activities of this project directly support the Joint Service CB defense program; in particular, the development of Joint Chemical, Biological, Radiological, and Nuclear (CBRN) defense capability requirements and the improvement of CBRN defense related doctrine, education, training, and awareness at the Joint and Service levels. This effort provides for: (1) Development, coordination, and integration of Joint CBRN defense capability requirements; (2) Development/revision of medical and non-medical CBRN defense Multi-Service Tactics, Techniques, and Procedures (MTTP), 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; (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 2010	FY 2011	FY 2012
Title: 1) JRO DT	6.546	6.332	5.132
FY 2010 Accomplishments: Supported 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.			
FY 2011 Plans: 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.			
FY 2012 Plans: 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.			
Accomplishments/Planned Programs Subtotals	6.546	6.332	5.132

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	**PROJECT** DT6: *JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT DW6: *MAJOR RANGE AND TEST FACILITY BASE (MRTFB)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DW6: *MAJOR RANGE AND TEST FACILITY BASE (MRTFB)*	53.713	60.274	55.224	-	55.224	59.859	61.329	61.062	51.038	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Project provides the technical capability for testing Department of Defense (DoD) Chemical and Biological (CB) defense materiel, equipment, and systems from concept through production at Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB). Funding reflects compliance with National Defense Authorization Act (NDAA) for FY 2003 (Public Law 107-314 - December 2002), Sec 232, requiring Major Range and Test Facility Bases to be fully funded and that DoD test customers be charged for direct costs only.

DPG, a MRTFB, 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 three test facility. Total institutional test operating costs are to be provided by the Service component IAW DoD 3200.11.

DPG 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 totally containing chemical agents and biological pathogens. DPG also provides a fully instrumented outdoor range capability for testing with simulants that can be correlated to the laboratory testing with live agents.

Projects programmed for testing at DPG include: Joint Nuclear, Biological, and Chemical Reconnaissance System (JNBCRS); Joint Biological Tactical Detection System (JBTDS); Joint Biological Stand-off Detection System (JBSDS); Joint Biological Agent Identification and Diagnostic System (JBAIDS); Joint Warning and Reporting Network (JWARN); Improved Point detection System (IPDS); Whole System Live Agent Test (WSLAT); Monitoring and Survey Sets, Kits, and Outfits (MSSKO); Dismounted Reconnaissance and Survey Sets, Kits and Outfits (DRSKO); Joint Platform Interior Decon (JPID); Joint Service General Purpose Mask (JSGPM); Next Generation Chem Point Detector (NGCPD); NBC Reconnaissance Vehicle-Sensor Suite Integration (NBCCRV-SSI); Special Purpose Units-CB Equipment (SPUCBE); Analytical Lab System (ALS); Joint Expeditionary Collective Protection (JECP); Joint Service Aircrew Mask (JSAM); Uniform Integrated Protective Ensemble (UIPE); NTA Detector and Decontamination Family of Systems (DFoS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) DPG, MRTFB	38.110	43.362	38.138
FY 2010 Accomplishments: Supported Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), operations to include institutional civilian labor costs for Army PBG authorizations, and support DOD and Department of Homeland Security needs. These civilian personnel included safety, security, resource management, surety operations, range control, environmental oversight, workload management, and training. This represented the civilian labor required to support operations, but could not be directly tied to a			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT DW6: *MAJOR RANGE AND TEST FACILITY BASE (MRTFB)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
single test and therefore, could not be charged to that test. The test customer paid all direct costs that were directly attributable to the use of a test facility or resource for testing of a particular program. ***FY 2011 Plans:*** Supports Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), operations to include institutional civilian labor costs for Army PBG authorizations and support DOD and Department of Homeland Security needs. These civilian personnel include safety, security, resource management, surety operations, range control, environmental oversight, workload management, and training. This represents the civilian labor required to support operations, but cannot be directly tied to a single test and therefore, cannot be charged to that test. The test customer pays all direct costs that are directly attributable to the use of a test facility or resource for testing of a particular program. ***FY 2012 Plans:*** Supports Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), operations to include institutional civilian labor costs for Army PBG authorizations and support DOD and Department of Homeland Security needs. These civilian personnel include safety, security, resource management, surety operations, range control, environmental oversight, workload management, and training. This represents the civilian labor required to support operations, but cannot be directly tied to a single test and therefore, cannot be charged to that test. The test customer pays all direct costs that are directly attributable to the use of a test facility or resource for testing of a particular program.			
Title: 2) DPG, MRTFB ***FY 2010 Accomplishments:*** Provided for postponed and ongoing sustainment of existing instrumentation and equipment at DPG in support of their operations. Supported annual service contracts for equipment operation, diagnostics, and calibration, as well as, routine life-cycle and use-related replacement of existing field, administrative, and analytical instrumentation components and systems. ***FY 2011 Plans:*** Provides for postponed and ongoing sustainment of existing instrumentation and equipment at DPG in support of their operations. Supports annual service contracts for equipment operation, diagnostics, and calibration, as well as, routine life-cycle and use-related replacement of existing field, administrative, and analytical instrumentation components and systems. ***FY 2012 Plans:*** Provides for postponed and ongoing sustainment of existing instrumentation and equipment at DPG 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.	6.394	6.921	6.622
Title: 3) DPG, MRTFB	1.884	2.082	1.857

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Provided DPG 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 DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex. ***FY 2011 Plans:*** Provides DPG 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 DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex. ***FY 2012 Plans:*** Provides DPG 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 DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.			
Title: 4) DPG, MRTFB ***FY 2010 Accomplishments:*** Supported DPG defense mission for contractor labor overhead costs. This was the institutional cost of providing contractual effort to this MRTFB including chemical and biological analysis, field support, planning, and report documentation. ***FY 2011 Plans:*** Supports DPG defense mission for contractor labor overhead costs. This is the institutional cost of providing contractual effort to this MRTFB including chemical and biological analysis, field support, planning, and report documentation. ***FY 2012 Plans:*** Supports DPG defense mission for 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.	7.325	7.409	6.610
Title: 5) DPG MRTFB ***FY 2011 Plans:*** Provides planning, concept, and design formulation to upgrade current test capabilities to establish NTA Developmental and Operational Test capability at West Desert Test Center, including tests to correlate agents to simulants performance, leveraging S&T capability at ECBC. Includes defining the scope of instrumentation and methodology modifications for field Operational Testing with NTA simulants and for chamber Developmental Testing with initial list of NTAs.	-	0.500	-
Title: 6) NTA TEST	-	-	1.997

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Provides initial phase of upgrade of current test capabilities to establish initial NTA Developmental and Operational Test capability at West Desert Test Center, including tests to correlate agents to simulants performance, leveraging S&T capability at ECBC 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.			
Accomplishments/Planned Programs Subtotals	53.713	60.274	55.224

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT LS6: *LABORATORY SUPPORT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
LS6: *LABORATORY SUPPORT*	10.155	18.945	0.702	-	0.702	8.774	8.800	9.210	5.405	Continuing	Continuing
Quantity of RDT&E Articles											

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 2010	FY 2011	FY 2012
Title: 1) LABINF - ECBC Gas Filters ***FY 2010 Accomplishments:*** Sustained modernized existing gas filters to include developing new filter designs with the capability of protecting against emerging threat agents. Included purchase, procurement, installing, monitoring, testing, certification, and disposal. ***FY 2011 Plans:*** Continue to sustain modernized existing gas filters to include developing new filter designs with the capability of protecting against emerging threat agents. Includes purchase, procurement, installing, monitoring, testing, certification, and disposal.	1.229	1.314	-
Title: 2) LABINF - Control Systems ***FY 2010 Accomplishments:*** Modernized mechanical and pneumatic control systems to full digital controls. ***FY 2011 Plans:*** Modernize mechanical and pneumatic control systems to full digital controls.	0.995	0.896	-
Title: 3) LABINF - Emergency Systems ***FY 2010 Accomplishments:*** Modernized emergency systems to increase reliability and safety. ***FY 2011 Plans:***	0.900	0.920	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Modernize emergency systems to increase reliability and safety.			
Title: 4) LABINF - ECBC Mechanical/Electrical Systems ***FY 2010 Accomplishments:*** Sustained and upgraded to key mechanical and electrical systems in surety buildings to ensure worker safety, environmental compliance, and continuity of operations. ***FY 2011 Plans:*** Sustain and upgrade to key mechanical and electrical systems in surety buildings to ensure worker safety, environmental compliance, and continuity of operations.	1.279	1.254	-
Title: 5) LABINF - ECBC Surety Facility Sustainment ***FY 2010 Accomplishments:*** Performed general facility sustainment in key surety facilities. This included general safety, structural, exterior, interior, and utility sustainment. ***FY 2011 Plans:*** Perform general facility sustainment in key surety facilities. Includes general safety, structural, exterior, interior, and utility sustainment.	0.900	0.900	-
Title: 6) LABINF - Initial Outfitting, Transition, and Equipment ***FY 2010 Accomplishments:*** Provided key chemical and biological defense effort upgrades, initial outfitting, and equipment for the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) and United States Army Medical Research Institute of Chemical Defense (USAMRICD) infrastructure. ***FY 2011 Plans:*** Provides key chemical and biological defense effort upgrades, initial outfitting, and equipment for the USAMRIID and USAMRICD infrastructure. ***FY 2012 Plans:*** 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	4.852	13.661	0.702

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
biological surety costs; occupational health issues; maintenance of the vivarium; and maintenance of the neat (chemical) agent facility for medical countermeasure development.			
Accomplishments/Planned Programs Subtotals	10.155	18.945	0.702

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MS6: *RDT&E MGT SUPPORT*	35.823	29.714	29.438	-	29.438	28.167	29.685	30.666	33.756	Continuing	Continuing
Quantity of RDT&E Articles											

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; and 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 include fund distribution, execution reporting and fiscal financial statements.

This project also supports the 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 CBD systems, as outlined in the RDA Plan. The T&E Executive guides JPEO planning and coordination with the Operational Test Activities to plan a series of methodology, instrumentation, and associated validation efforts that provide test infrastructure and technologies for testing RDA systems needed to support all Services, and to ensure the adequacy of testing for RDA systems in alignment with acquisition schedules 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 testing the CBD systems for all services to include radiological, nuclear, medical T&E efforts.

The CBDP 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 CBDP 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 CBDP T&E Executive oversees T&E processes to include fielded equipment assessments to ensure end to end support to the war fighter. The CBDP T&E Executive oversees T&E processes to include fielded equipment assessments to insure end-to-end support to the warfighter.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JRO MGT	7.298	9.424	10.159

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2010 Accomplishments: Represented the Services and Combatant Commanders in the development, coordination, and integration of CBRN defense operational capabilities across all DoD mission areas. Planned, coordinated and executed 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 Joint Priorities List (JPL); CBRN Defense Joint Future Operational Capabilities; Program Objective Memorandum; and the CBD Annual Report to Congress. ***FY 2011 Plans:*** 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. ***FY 2012 Plans:*** 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.			
Title: 2) JTIWG ***FY 2010 Accomplishments:*** Joint Test Infrastructure Working Group (JTIWG) - Continued Test and Evaluation (T&E) Executive mission support to ensure credible testing of Chemical Biological Defense Program (CBDP) systems and support to the Director for Operational Test and Evaluation (DOT&E) for OSD T&E Oversight. Continued direct support to the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) and the Joint Requirements Office (JRO) Integrated Process Teams (IPTs) and Integrated Concept Teams (ICTs) providing technical assistance to structure acquisition programs and test scopes. Continued early involvement of the Operational Test Agencies (OTAs) and other T&E organizations in T&E infrastructure planning. Continued development of threat test support documentation to support developmental and operational tests in which an operational threat must be realistically presented, including Joint Biological Standoff Detection System (JBSDS); Joint Biological Tactical Detection System (JBTDS); Joint Biological Agent Identification and Diagnostic System (JBAIDS); Joint Warning and Reporting Network (JWARN); Improved Point Detection System (IPDS); Next Generation Chemical Point Detection(NGCPD) and all detectors; Uniform Individual Protection Ensemble(UIPE); Joint Platform Interior Decontamination(JPID); Dismounted Reconnaissance	4.618	4.857	5.738

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Sets, Kits, and Outfits (DR-SKO), Monitor and Survey Sets, Kits, Outfits (MS-SKO); Joint Expeditionary Collective Protection (JECP); Decontamination Family of Systems (DFoS); Next Generation Diagnostic Systems (NGDS). Continued support to JPEO-CBD and Joint Science and Technology Office (JSTO)-CB regarding specific test methodology and test technology needs, to include updates to the Technology Transition documents, participation in scientific review panels, and review of technology/ methodology and development plans. Continued to provide guidance to improve the Test and Evaluation Master Plan (TEMP) for acquisition programs, threat support documentation development, and development of T&E Capabilities Needs Statements and to expedite Lead OTA assignment and overall coordination. Continued to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US Memorandum of Understanding (MOU). Provided T&E infrastructure input to the Program Objective Memorandum (POM) process and supported JRO, Program Analysis and Integration Office (PA&IO), and SA(CBD & CDP) in development and defense of POM and Budget submissions. Provide subject matter expertise to assist community to implement T&E aspects of National and DoD guidance and policy: Chemical Biological Radiological Contamination Survivability (CBRCS), Homeland Security Presidential Directive(HSPD), and DOD 5000. This project also supports T&E Early Involvement, test threat planning, Fielded Equipment Assessments, T&E Studies, and T&E Standards planning and development to support testing the CBDP systems for all Services. ***FY 2011 Plans:*** Joint Test Infrastructure Working Group (JTIWG) - Continued Test and Evaluation (T&E) Executive mission support to ensure credible testing of Chemical Biological Defense Program (CBDP) systems and support to the Director for Operational Test and Evaluation (DOT&E) for OSD T&E Oversight. Continued direct support to the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) and the Joint Requirements Office (JRO) Integrated Process Teams (IPTs) and Integrated Concept Teams (ICTs) providing technical assistance to structure acquisition programs and test scopes. Continued early involvement of the Operational Test Agencies (OTAs) and other T&E organizations in T&E infrastructure planning. Continued development of threat test support documentation to support developmental and operational tests in which an operational threat must be realistically presented, including Joint Biological Standoff Detection System (JBSDS); Joint Biological Tactical Detection System (JBTDS); Joint Biological Agent Identification and Diagnostic System (JBAIDS); Joint Warning and Reporting Network (JWARN); Improved Point Detection System (IPDS); Next Generation Chemical Point Detection(NGCPD) and all detectors; Uniform Individual Protection Ensemble(UIPE); Joint Platform Interior Decontamination(JPID); Dismounted Reconnaissance Sets, Kits, and Outfits (DR-SKO), Monitor and Survey Sets, Kits, Outfits (MS-SKO); Joint Expeditionary Collective Protection (JECP); Decontamination Family of Systems (DFoS); Next Generation Diagnostic Systems (NGDS). Continued support to JPEO-CBD and Joint Science and Technology Office (JSTO)-CB regarding specific test methodology and test technology needs, to include updates to the Technology Transition documents, participation in scientific review panels, and review of technology/ methodology and development plans. Continued to provide guidance to improve the Test and Evaluation Master Plan (TEMP) for acquisition programs, threat support documentation development, and development of T&E Capabilities Needs Statements and			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
to expedite Lead OTA assignment and overall coordination. Continued to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US Memorandum of Understanding (MOU). Provided T&E infrastructure input to the Program Objective Memorandum (POM) process and supported JRO, Program Analysis and Integration Office (PA&IO), and SA(CBD & CDP) in development and defense of POM and Budget submissions. Provide subject matter expertise to assist community to implement T&E aspects of National and DoD guidance and policy: Chemical Biological Radiological Contamination Survivability (CBRCS), Homeland Security Presidential Directive(HSPD), and DOD 5000. This project also supports T&E Early Involvement, test threat planning, Fielded Equipment Assessments, T&E Studies, and support the Assistant to the Secretary of Defense (NCB) in infrastructure planning and establishing T&E Standards to support the White House Subcommittee on Standards and other interagency groups for planning and development to support testing the CBDP systems for all Services to include Radiological/Nuclear and Medical T&E efforts. ***FY 2012 Plans:*** JTIWG - Continue T&E Executive mission support to ensure credible testing, 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 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; MS SKO and DR SKO; Decon Family of Systems; JECP; JBPDS; JBSDS; JPID; JSGPM; NGCPD; UIPE; JECP; 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, and participation in scientific review panels. Continue to provide guidance to improve the 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 SA(CBD & CDP) in development and defense of POM and Budget submissions.			
Title: 3) OSD MGT ***FY 2010 Accomplishments:***	16.294	10.160	7.703

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Performed program reviews/assessments, provided programmatic PPBE oversight/analysis, and provided congressional issue analysis and support. Supported financial management services provided by DTRA, such as funding distribution and execution reporting. ***FY 2011 Plans:*** Continue to perform program reviews/assessments, provide programmatic PPBE oversight/analysis, and provide congressional issue analysis and support. Continue to Support financial management services provided by DTRA, such as funding distribution and execution reporting. ***FY 2012 Plans:*** Continue to perform program reviews/assessments, provide programmatic PPBE oversight/analysis, and provide congressional issue analysis and support. Continue to support financial management services provided by DTRA, such as funding distribution and execution reporting.			
Title: 4) PAIO MGT ***FY 2010 Accomplishments:*** Developed assessments to support RDA Planning. Provided analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Responded to specialized evaluation studies throughout the PPBE process. Provided JSCBIS database management. ***FY 2011 Plans:*** Continue to 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. Continue to respond to specialized evaluation studies throughout the PPBE process. Continue to provide JSCBIS database management. ***FY 2012 Plans:*** Continue to develop assessments to support RDA Planning. Continue to provide analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Continue to respond to specialized evaluation studies throughout the PPBE process. Continue to provide JSCBIS database management.	7.613	5.273	5.838
Accomplishments/Planned Programs Subtotals	35.823	29.714	29.438

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT MS6: *RDT&E MGT SUPPORT*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
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)*	PROJECT O49: *JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
O49: *JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM*	7.117	5.730	2.310	-	2.310	2.205	2.280	2.329	2.379	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The objectives of the Joint Concept Development and Experimentation (JCDE) program are to plan, conduct, evaluate, and report on joint tests and experiments (for other than developmental hardware) and accomplish capability development assessments. This program will provide ongoing input to the Combatant Commanders and Services for development of doctrine, policy, training procedures, and feedback into the Joint Capabilities Integration and Development System (JCID) and acquisition processes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JCDE	7.117	5.730	2.310
FY 2010 Accomplishments: Supported the Joint Combat Developer for Experimentation (JCDE) for CBRND in conducting workshops, studies, war games and limited objective experiments to explore, refine, and validate potential solutions and alternatives that will update and improve the Joint CBRND concept.			
FY 2011 Plans: Continue to support the Joint Combat Developer for Experimentation (JCDE) for CBRND in conducting workshops, studies, war games and limited objective experiments to explore, refine, and validate potential solutions and alternatives that will update and improve the Joint CBRND concept.			
FY 2012 Plans: Continue to support the Joint Combat Developer for Experimentation (JCDE) for CBRND in conducting workshops, studies, war games and limited objective experiments to explore, refine, and validate potential solutions and alternatives that will update and improve the Joint CBRND concept.			
Accomplishments/Planned Programs Subtotals	7.117	5.730	2.310

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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)*	PROJECT O49: *JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 6: *RDT&E Management Support*	R-1 ITEM NOMENCLATURE PE 0605502BP: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	14.976	-	-	-	-	-	-	-	-	0.000	14.976
SB6: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	14.976	-	-	-	-	-	-	-	-	0.000	14.976

A. Mission Description and Budget Item Justification

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

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	14.976	-	-	-	-
Total Adjustments	14.976	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	14.976	-			
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

Funding: FY10 - Funding transferred and applied to SBIR program (+$14,976K).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 6: *RDT&E Management Support*	R-1 ITEM NOMENCLATURE PE 0605502BP: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	PROJECT SB6: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
SB6: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	14.976	-	-	-	-	-	-	-	-	0.000	14.976
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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

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

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

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

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

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 6: *RDT&E Management Support*	**R-1 ITEM NOMENCLATURE** PE 0605502BP: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	**PROJECT** SB6: *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) ZSBIR	14.976	-	-
FY 2010 Accomplishments: Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	14.976	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	6.089	6.634	15.956	-	15.956	9.872	8.440	18.437	25.194	Continuing	Continuing
IP7: *INDIVIDUAL PROTECTION (OP SYS DEV)*	-	-	-	-	-	-	0.494	2.467	1.470	Continuing	Continuing
IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	1.284	1.821	6.911	-	6.911	6.032	4.565	4.264	6.261	Continuing	Continuing
MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	-	-	5.448	-	5.448	0.492	0.493	8.851	15.459	Continuing	Continuing
TE7: *TEST & EVALUATION (OP SYS DEV)*	4.805	4.813	3.597	-	3.597	3.348	2.888	2.855	2.004	Continuing	Continuing

A. Mission Description and Budget Item Justification

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

Efforts in this program element support the upgrade of fielded CB defense equipment against emerging chemical threat agents and toxic industrial chemicals. Specifically this program includes: (1) the upgrade and modernization of information systems; (2) the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) 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).

BA7 reductions in support of the DoD Efficiency Initiatives for FY12 include: Program management support reduced (-$0.128M).

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Chemical and Biological Defense Program	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	6.172	6.634	9.317	-	9.317
Current President's Budget	6.089	6.634	15.956	-	15.956
Total Adjustments	-0.083	-	6.639	-	6.639
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	0.001	-			
• SBIR/STTR Transfer	-0.075	-			
• Other Adjustments	-0.009	-	6.639	-	6.639

Change Summary Explanation

Funding: FY10 - Adjustments less than 10% of total program.

FY12 - Program realignments to support high priority CBDP and DoD program initiatives (-$2,869K IP5; +$5,252K IS7; +$5,457K MB7; -$1,176K TE7); Economic Assumptions (-$10K IS7; -$9K MB7; -$6K TE7)

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IP7: *INDIVIDUAL PROTECTION (OP SYS DEV)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IP7: *INDIVIDUAL PROTECTION (OP SYS DEV)*	-	-	-	-	-	-	0.494	2.467	1.470	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This R-2A Plan is strictly for planning purposes; no funds are requested in this FY

A. Mission Description and Budget Item Justification

N/A

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: N/A ***FY 2010 Accomplishments:*** N/A	-	-	-
Accomplishments/Planned Programs Subtotals	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	1.284	1.821	6.911	-	6.911	6.032	4.565	4.264	6.261	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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

The JEM is DoD's only accredited model 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 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 JPEO-CBD SSA is a JPEO-CBD enterprise-wide, 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

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JEM Command and Control (C2) Modernization Efforts ***FY 2012 Plans:*** Modernize 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.	-	-	0.796
Title: 2) JEM Pre-Planned Product Improvement (P3I) ***FY 2012 Plans:*** 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.	-	-	2.000
Title: 3) JWARN ***Description:*** System Modernization/Update Development ***FY 2012 Plans:*** Initiate engineering and manufacturing development to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems.	-	-	1.687
Title: 4) JWARN ***Description:*** Program Management Support ***FY 2012 Plans:*** Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort.	-	-	0.223
Title: 5) JWARN ***Description:*** Test and Evaluation ***FY 2012 Plans:*** Initiate required government developmental testing on JWARN software updates and modernization efforts.	-	-	0.337
Title: 6) JWARN ***Description:*** Technical Support	-	-	0.336

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Initiate engineering and technical support efforts to support JWARN modernization.			
Title: 7) SSA Policies, Standards and Guidelines ***FY 2010 Accomplishments:*** Provided Policies, Standards & Guidelines to Federal Information Security Management Act (FISMA) and J6 Interoperability certification support. ***FY 2011 Plans:*** Provide ISP development support for JPEO-CBD programs. Continue to provide Modeling and Simulation (M&S) Accreditation Steering Group Support. Provide guidance and support to JPEO-CBD programs ensuring compliance with Service Net Centric requirements. ***FY 2012 Plans:*** Continue to provide ISP development support for JPEO-CBD programs. Continue to provide M&S Accreditation Steering Group Support. Continue to provide guidance and support to JPEO-CBD programs ensuring compliance with Service Net Centric requirements.	0.332	0.456	0.403
Title: 8) SSA Integrated Architecture ***FY 2010 Accomplishments:*** Used a federated approach to create a comprehensive framework of information security controls that affect the JPEO-CBD's IT Enterprise. Identified host system requirements and derived formal delivery dates for host systems. ***FY 2011 Plans:*** Provide and update program of record integrated architectures. Provide Net-Centric Policy implementation assistance. Support Common CBRN Sensor Interface (CCSI) Standard updates. Provide CCSI reference implementation. Provide support of enterprise tools and common capabilities to ensure relevance across CBRN programs. ***FY 2012 Plans:*** Continue to provide and update program of record integrated architectures. Continue to provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Continue support of enterprise tools and common capabilities to ensure relevance across CBRN programs.	0.414	0.580	0.462
Title: 9) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model ***FY 2010 Accomplishments:***	0.415	0.612	0.465

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continued to provide Data Model Implementation Guidance. Developed and provided CBRN Data Model implementation guidance including reference implementation. ***FY 2011 Plans:*** Provide CBRN Data Model implementation guidance including reference implementation. Analyze requirements and assist programs with implementation of the CBRN data model. Support Data Model implementations and emerging CBRN programs including requirements for data elements in relation to Bio-surveillance initiatives. ***FY 2012 Plans:*** Continue to provide Data Model Implementation Guidance. Continue to develop and provide CBRN Data Model implementation guidance including reference implementation. Continue to analyze requirements and assist programs with implementation of the CBRN data model. Continue to support data model changes. Support Data Model requirements for Bio-surveillance initiatives.			
Title: 10) SSA Information Assurance ***FY 2010 Accomplishments:*** Provided System Security Management Procedures to obtain Information Assurance (IA) certification and acceptance services for developed JPEO-CBD IT programs. Ensured compliance with Information System Security (INFOSEC) Certification and Accreditation (C&A) practices related to Security Awareness and Training, Risk Management Plans and Incident Response Plans for JEM and JWARN. Obtained authorization to operate (ATO) annually to confirm that the IA posture of the IS remains acceptable. Validated IA controls and documented findings to maintain certification on host systems. ***FY 2011 Plans:*** Continue providing Information Assurance Site Compliance Testing for JPEO-CBD. Continue to provide Information Assurance Certification/Acceptance products and services for JPEO-CBD programs. ***FY 2012 Plans:*** Continue providing Information Assurance Site Compliance Testing for JPEO-CBD. Continue to provide Information Assurance Certification/Acceptance products and services.	0.123	0.173	0.202
Accomplishments/Planned Programs Subtotals	1.284	1.821	6.911

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

JEM

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

The Joint Effects Model (JEM) is following an evolutionary acquisition approach that will allow rapid fielding of existing technologies while further research and development (R&D) continues in order to mature the technologies required for subsequent versions of JEM. JEM is now being fielded in increments of capabilities. Each increment will retain the functionality of the preceding increment. The JEM development effort will be aligned with the evolving Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) architectures and technologies, as well as, with Service Command and Control (C2) systems. JEM will develop three distinct increments of software. JEM is a web-services based application and has been granted an Interoperability Certificate by the Joint Interoperability Test Command (JITC). The program plans to award competitive contracts using fixed price or cost-plus as appropriate.

JWARN

JWARN will develop and provide Integrated Early Warning capabilities to specified (Common Operating Environment (COE-based)) operational-level Service Command and Control (C2) systems at the Global Command and Control System (GCCS) level, extend the integration effort into the Service tactical (non COE-based) C2 systems, provide connectivity to legacy and newly developed sensors, and complete the development of JWARN.

JWARN will extend these baseline capabilities to emerging, net-centric, Service C2 systems and Service CBRN sensors and detectors as they are developed and fielded. JWARN will also ensure CBRN warning and reporting capabilities remain synchronized with the changing demands of the Warfighter while keeping pace with evolving C2 systems and their architectures, and will further evolve by integrating next generation sensors, detectors and emerging Medical and Biological Surveillance requirements into the CBRN Enterprise.

SSA

The JPEO-CBD Software Support Activity (SSA) is a JPEO-CBD user support organization spanning and supporting all Joint Project Managers (JPMs) and JPEO-CBD Directorates. The SSA provides enterprise-wide services and coordination across all JPEO-CBD Programs of Record (PORs) 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) across the JPEO and all JPMs.

Phase 1a identifies JPEO-CBD JPMs and programs that deal with data or software, and have an IT component. This will be followed by coordination with the JPMs and programs 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 1b established management and control measures for tracking and reporting progress of the various elements described in Phases 1 and 2. This includes establishing, tracking, and performing configuration management of inventories and databases of IT systems and their states of interoperability and information assurance compliance. (BA6 - RDT&E Management Support).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
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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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JEM - SW SB - JEM	MIPR	Various:	-	-		2.796	Feb 2012	-		2.796	Continuing	Continuing	0.000
** JWARN - SW S - JWARN	C/CPAF	TBD:	-	-		1.686	Feb 2012	-		1.686	Continuing	Continuing	0.000
** SSA - HW S - Development Services	MIPR	SPAWAR System Center:San Diego, CA	1.393	0.609	Nov 2010	0.702	Nov 2011	-		0.702	Continuing	Continuing	0.000
		Subtotal	1.393	0.609		5.184		-		5.184			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JWARN - TD/D SB - JWARN	MIPR	Various:	-	-		0.337	Feb 2012	-		0.337	0.336	0.673	0.000
** SSA - ES S - Develop Support Activities	MIPR	SPAWAR Systems Center:San Diego, CA	1.444	0.628	Nov 2010	0.320	Nov 2011	-		0.320	0.000	2.392	0.000
		Subtotal	1.444	0.628		0.657		-		0.657	0.336	3.065	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JWARN - DTE SB - JWARN	MIPR	Various:	-	-		0.337	Feb 2012	-		0.337	0.336	0.673	0.000
** SSA - OTHT S - Integration Verification and Valuation (IV&V)	MIPR	SPAWAR Systems Center:San Diego, CA	1.554	0.584	Nov 2010	0.510	Nov 2011	-		0.510	0.000	2.648	0.000
		Subtotal	1.554	0.584		0.847		-		0.847	0.336	3.321	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JWARN - PM/MS S - JWARN	MIPR	Various:	-	-		0.223	Feb 2012	-		0.223	0.223	0.446	0.000
		Subtotal	-	-		0.223		-		0.223	0.223	0.446	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.391	1.821		6.911		-		6.911			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

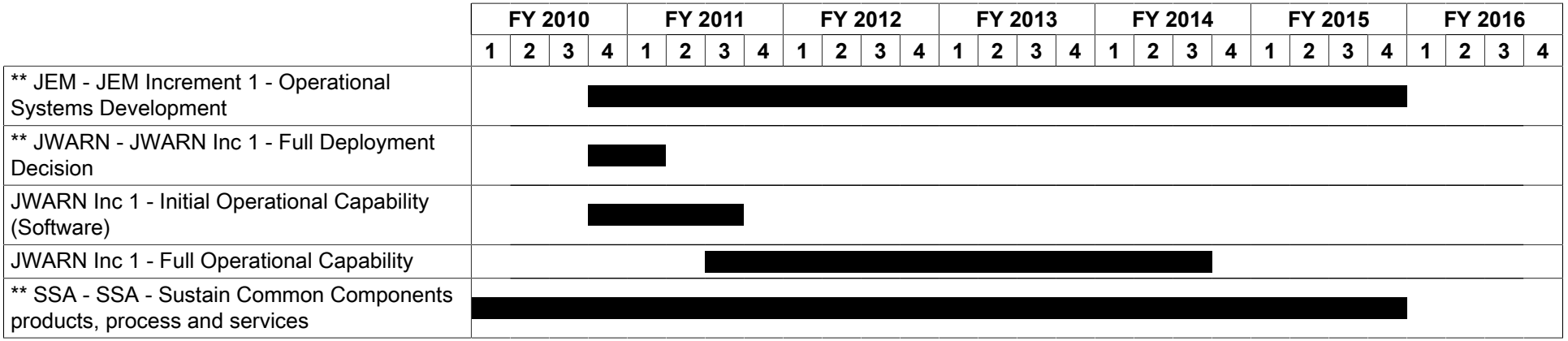

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** IS7: *INFORMATION SYSTEMS (OP SYS DEV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JEM - JEM Increment 1 - Operational Systems Development	4	2010	4	2015
** JWARN - JWARN Inc 1 - Full Deployment Decision	4	2010	1	2011
JWARN Inc 1 - Initial Operational Capability (Software)	4	2010	3	2011
JWARN Inc 1 - Full Operational Capability	3	2011	3	2014
** SSA - SSA - Sustain Common Components products, process and services	1	2010	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	-	-	5.448	-	5.448	0.492	0.493	8.851	15.459	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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

JBAIDS is an evolutionary development program. Increment 1 will be a rapid development and fielding effort to deliver a critical capability to identify bacterial and viral agents to the field in the shortest time. Increment 1 development effort focuses on militarizing and hardening of critical identification technologies based on a Commercial off-the-shelf (COTS) item and on obtaining FDA clearance for the assays and hardware. BA7 efforts include the development of additional surveillance and diagnostic assays for the JBAIDS Block 1 platform.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) JBAIDS ***FY 2012 Plans:*** Initiate development and integration of additional surveillance assay and diagnostic kits (replacement for Burkholderia surveillance assay).	-	-	4.475
Title: 2) JBAIDS ***FY 2012 Plans:*** Conduct annual Federal Information Security Management Act (FISMA) software compliance certifications and parts obsolescence.	-	-	0.424
Title: 3) JBAIDS ***FY 2012 Plans:*** Initiate Pre-Emergency Use Authorizations (EUA) packages for Ebola disease.	-	-	0.549
Accomplishments/Planned Programs Subtotals	-	-	5.448

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

JBAIDS

The Government JBAIDS program office plans an open competitive source selection to select the contractor to design and manufacture the additional surveillance assay kits to detect food and water pathogens (e.g., E coli, Salmonella, Cryptosporidium) along with diagnostic kits to detect Tier 2 Joint Operational Requirements Document (JORD) threat agents. Also, the JBAIDS program office plans to work with and MIPR funds to another JPEO-CBD activity (JPM-IS) 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 and MIPR funds to the US Army Medical Institute of Infectious Diseases (USAMRIID) to development FDA Pre-Emergency Use Authorization (EUA) packages for (e.g., Ebola, Marburg, and Smallpox diseases) that could be used as biological warfare threats to DoD military forces. JBAIDS program office will award a sole-source contract to the JBAIDS prime contractor, Idaho Technology Inc., to replace laptops and software operating systems in 340 deployed JBAIDS worldwide due to parts obsolescence and unsupportable Microsoft software (Microsoft XP Professional).

MCMI

MCM products will be developed by the private sector, academia and the government and transitioned to the Technical Center of Excellence (TCE) for manufacture as product maturity aligns with readiness of the facility and its operating structure. Rights to Intellectual Property will be required for subsequent advanced development and manufacturing (Government Purpose Rights). The Government intends to partner with multiple private companies and educational institutions. The TCE establishment will be formalized by competitively entering into an agreement under Other Transaction Authority (OTA) that is expected to allow the sharing of costs to meet objectives, and provide the availability of excess capacity. Innovative incentive provisions and cost sharing arrangements will be explored via interaction with industry through a Request For Information (RFI), industry day(s) and a Draft Request For Proposal (RFP) prior to release of the final solicitation.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBAIDS - HW S - Assay development	C/FFP	TBD:	-	-		3.255	May 2012	-		3.255	Continuing	Continuing	0.000
		Subtotal	-	-		3.255		-		3.255			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBAIDS - ES S - Software Update	C/FFP	Idaho Technology Inc.:Salt Lake City, UT	-	-		0.325	May 2012	-		0.325	0.000	0.325	0.000
		Subtotal	-	-		0.325		-		0.325	0.000	0.325	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBAIDS - OTHT S - EUA packages	MIPR	USAMRIID:Fort Detrick, MD	-	-		0.449	Feb 2012	-		0.449	0.000	0.449	0.000
		Subtotal	-	-		0.449		-		0.449	0.000	0.449	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** JBAIDS - PM/MS S - Project Management	MIPR	TBD:	-	-		0.150	Feb 2012	-		0.150	0.000	0.150	0.000
PM/MS S - Project Management	PO	Goldbelt Raven:LLC, Frederick	-	-		0.769	May 2012	-		0.769	0.000	0.769	0.000
PM/MS C - Joint Program Executive Office	Allot	JPEO:Falls Church, VA	-	-		0.500	Feb 2012	-		0.500	0.000	0.500	0.000
		Subtotal	-	-		1.419		-		1.419	0.000	1.419	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		5.448		-		5.448			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*

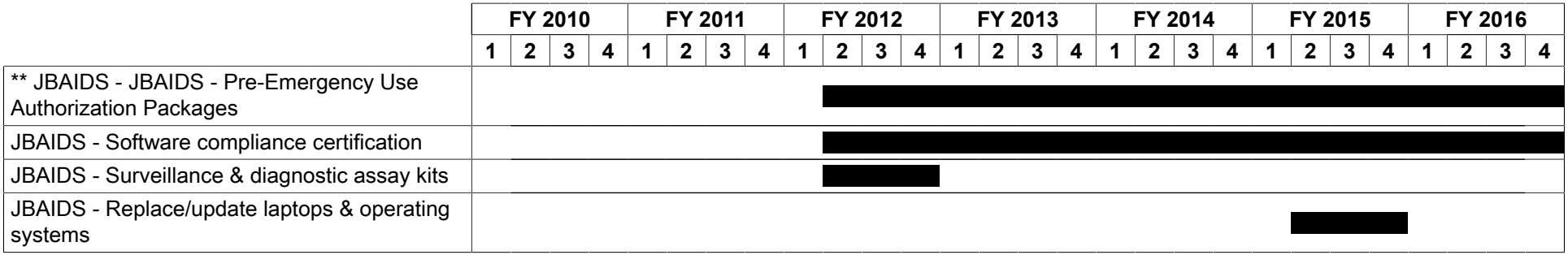

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** JBAIDS - JBAIDS - Pre-Emergency Use Authorization Packages	2	2012	4	2016
JBAIDS - Software compliance certification	2	2012	4	2016
JBAIDS - Surveillance & diagnostic assay kits	2	2012	4	2012
JBAIDS - Replace/update laptops & operating systems	2	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
TE7: *TEST & EVALUATION (OP SYS DEV)*	4.805	4.813	3.597	-	3.597	3.348	2.888	2.855	2.004	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Project provides revitalization and technology upgrades of existing instrumentation and equipment at Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), in support of their Chemical Biological test mission.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 1) DPG - MRTFB	0.905	0.866	0.647

FY 2010 Accomplishments:

Provided upgrades of the Life Sciences Test Facility instrumentation and equipment at Dugway Proving Ground (DPG), in support of their CB defense mission. This was 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) Replacement of a Scanning Electron Microscope and light microscopes; (2) Replacement of Aerodynamic Particle Sizers with newer Fluorescent Aerodynamic Particle Sizers; (3) Full characterization of biological aerosols in various conditions inside the test chambers; (4) An automated liquid aerosol dissemination systems that will vary concentrations of aerosols in chamber and field clouds; (5) Procured aerosol samplers for chamber and field testing; (6) Continued upgrades/improvements to the Containment Aerosol Chamber (CAC) with capability to create environmental conditions with varying combinations of air temperature and relative humidity; and, (7) Continued procurement of microbiological laboratory equipment needed to utilize new Bio-Safety Level 3 laboratories.

FY 2011 Plans:

Continue to provide upgrades of the Life Sciences Test Facility instrumentation and equipment at Dugway Proving Ground (DPG), 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 include 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 to determine genetic identity of biological samples and procure genotyping analysis software to determine genetic identity of biological samples; (6) Upgrade aerosol particles generation capabilities for standoff and point detector characterization; and, (7) Procurement of microbiological laboratory equipment needed to fully utilize Bio-Safety Level 3 laboratories.

FY 2012 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** TE7: *TEST & EVALUATION (OP SYS DEV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue to provide upgrades of the Life Sciences Test Facility instrumentation and equipment at Dugway Proving Ground (DPG), 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 include 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 particles generation capabilities for standoff and point detector characterization; and, (7) Procurement of microbiological laboratory equipment needed to fully utilize Bio-Safety Level 3 laboratories.			
Title: 2) DPG - MRTFB	1.020	1.059	0.792
FY 2010 Accomplishments: Provided for modernization of existing instrumentation and equipment in the major test chambers at DPG, in support of the CB defense mission. These consisted of the following: (1) the Materiel Test Facility which was a unique test chamber where real-world decontamination operations were tested; (2) Building 4165, which housed updated chemical-surety test facilities and laboratories used to test chemical protective material with chemical agents and simulants; and (3) Bldg 3445, which housed two large chambers used to test large panel decontaminants, filter systems, and Individual Protection Equipment (IPE) in a chemical environment. Modernization of instrumentation in the chambers included: (1) Continued development of a chemical aerosol generation and sampling capability; (2) Characterization of improved and/or articulated testing fixtures; (3) Enhanced toxic industrial chemical detection and control capability; and (4) Initial enhancements in preparation for Non Traditional Agent test capability.			
FY 2011 Plans: Continue to provide for modernization of existing instrumentation and equipment in the major test chambers at DPG, 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 chemical-surety test facilities and laboratories used for the testing of chemical protective material with chemical agents and simulants; and (3) Bldg 3445, which houses two large chambers where testing of large panel decontaminants, filter systems, and Individual Protection Equipment (IPE) in a chemical environment can be conducted; and the (4) Aerosol Test Facility, which houses chemical simulant vapor test chamber and an aerosol test chamber. Modernization of instrumentation in the chambers included: (1) Continue development of a chemical aerosol generation and sampling capability; and (2) Characterization of improved and/or articulated testing fixtures;			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
and (3) Continue enhancement of toxic industrial chemical detection and test capability; and (4) Non-Traditional Agent test and detection capability. ***FY 2012 Plans:*** Continue to provide for modernization of existing instrumentation and equipment in the major test chambers at DPG, 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 chemical-surety test facilities and laboratories used for the testing of chemical protective material with chemical agents and simulants; and the (3) Aerosol Test Facility, which houses chemical simulant vapor test chamber and an aerosol test chamber. Modernization of instrumentation in the chambers included: (1) Continue development of a chemical aerosol generation and sampling capability; and (2) Characterization of improved and/or articulated testing fixtures; and (3) Continue enhancement of toxic industrial chemical detection and test capability; and (4) Non-Traditional Agent test and detection capability.			
Title: 3) DPG - MRTFB ***FY 2010 Accomplishments:*** Enhanced existing instrumentation and equipment at the Target S, Downwind, and Tower CB Test Grids at DPG, in support of their CB defense mission. The CB Test Grids are critical for all Developmental Tests/Operational Tests of CB defense systems. Efforts are to address requirements not addressed by the PD TESS Test Grid project. Modernization efforts included: (1) Increased resolution and coverage areas for meteorological monitoring and unique testing requirements; (2) Required raptor management to support monitoring and testing without affecting eagles and migratory birds; (3) Wireless network to support meteorology equipment and other equipment outside of the standard PD TESS test grid frequency; and (4) Standoff referee systems for TICs and aerosols. ***FY 2011 Plans:*** Continue to enhance existing instrumentation and equipment at the Target S, Downwind, and Tower CB Test Grids at DPG, in support of their CB defense mission. Efforts are to address requirements not addressed by the PD TESS Test Grid project. The CB Test Grids are critical for all Developmental Tests/Operational Tests of CB defense systems. Continuing modernization efforts will include: (1) Development of NTA field simulants and monitoring equipment; (2) Increased TIC testing capability for both point and standoff referee systems; (3) Add testing capability to support expanded use of agent like organisms (ALO); and (4) Raptor management and control to support testing without affecting eagles and migratory birds. ***FY 2012 Plans:*** Continue to enhance existing instrumentation and equipment at the Target S, Downwind, and Tower CB Test Grids at DPG, in support of their CB defense mission. Efforts are to address requirements not addressed by the PD TESS Test Grid project. The CB Test Grids are critical for all Developmental Tests/Operational Tests of CB defense systems. Continuing modernization efforts	1.058	1.059	0.792

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
will include: (1) Development of NTA field simulants and monitoring equipment; (2) Increased TIC testing capability for both point and standoff referee systems; (3) Add testing capability to support expanded use of agent like organisms (ALO); and (4) Raptor management and control to support testing without affecting eagles and migratory birds.			
Title: 4) DPG - MRTFB ***FY 2010 Accomplishments:*** Provided for revitalization and upgrade of existing instrumentation and equipment at the Combined Chemical Test Facility at Dugway Proving Ground (DPG), in support of their CB test mission. The Combined Chemical Test Facility tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. This project upgrades analytical and field instrumentation with current technology to include: (1) Characterization of new and upgraded test fixtures such as the advanced air purification fixture and novel closures fixture; (2) Upgraded control systems for small chambers such as the small item decontamination fixture; (3) Installation support for a dynamic test chamber for work with surety agents and toxic chemicals under continuously-varying conditions; (4) Characterization of upgraded real time swatch capability; and (5) Enhancement of the toxic industrial chemical test capability. ***FY 2011 Plans:*** Provides for revitalization and upgrade of existing instrumentation and equipment at the Combined Chemical Test Facility at Dugway Proving Ground (DPG), in support of their CB test mission. The Combined Chemical Test Facility tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. This project upgrades analytical and field instrumentation with current technology to include: (1) Characterization of new and upgraded test fixtures; (2) Upgraded control systems for small chambers; (3) Installation support for the next-generation Chemical Biological Agent Resistance Test (CBART) capability. ***FY 2012 Plans:*** Provides for revitalization and upgrade of existing instrumentation and equipment at the Combined Chemical Test Facility at Dugway Proving Ground (DPG), in support of their CB test mission. The Combined Chemical Test Facility tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. This project upgrades analytical and field instrumentation with current technology to include: (1) Characterization of new and upgraded test fixtures; and (2) Upgraded control systems for small chambers.	1.822	1.829	1.366
Accomplishments/Planned Programs Subtotals	4.805	4.813	3.597

Exhibit R-2A, RDT&E Project Justification: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

T&E UPGRAD

T&E Range Instrumentation/Technology Upgrades is a continuing project. It provides for technical upgrades to DPG capabilities for Chemical and Biological training and testing DoD Chemical and Biological (CB) materiel, weapons, and weapons systems from concept through production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
** T&E UPGRAD - OTHT S - Technology Upgrades - DPG, UT	MIPR	Dugway Proving Grounds:DPG, UT	14.429	4.813	Feb 2011	3.597	Feb 2012	-		3.597	0.000	22.839	0.000
		Subtotal	14.429	4.813		3.597		-		3.597	0.000	22.839	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.429	4.813		3.597		-		3.597	0.000	22.839	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	PROJECT TE7: *TEST & EVALUATION (OP SYS DEV)*

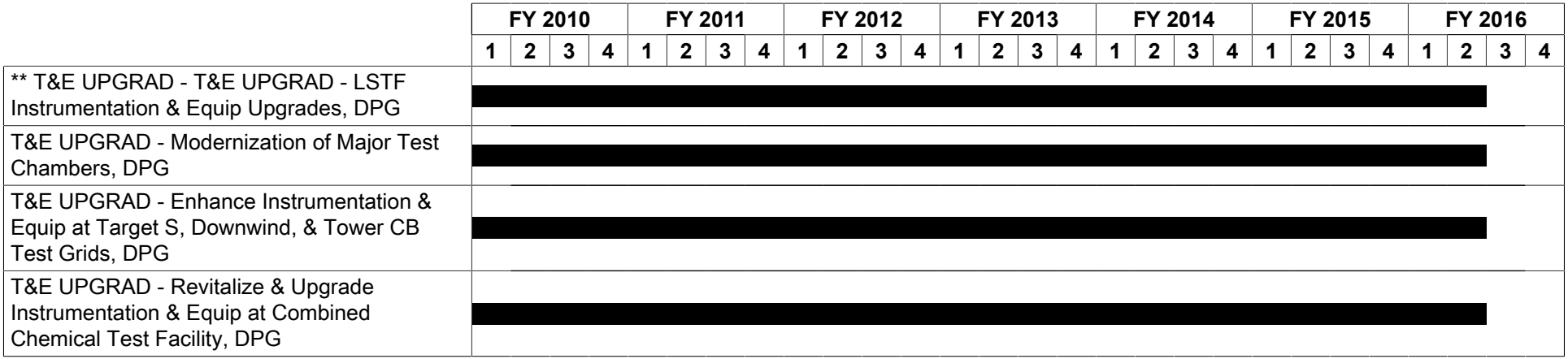

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Chemical and Biological Defense Program		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0607384BP: *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**PROJECT** TE7: *TEST & EVALUATION (OP SYS DEV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
** T&E UPGRAD - T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, DPG	1	2010	2	2016
T&E UPGRAD - Modernization of Major Test Chambers, DPG	1	2010	2	2016
T&E UPGRAD - Enhance Instrumentation & Equip at Target S, Downwind, & Tower CB Test Grids, DPG	1	2010	2	2016
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equip at Combined Chemical Test Facility, DPG	1	2010	2	2016

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