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Department of Defense Fiscal Year (FY) 2008/2009 Budget Estimates

February 2007

Research, Development, Test, and Evaluation, Defense-Wide

Volume 4

Chemical and Biological Defense Program (CBDP)

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Table of Contents
DoD Joint Service Chemical and Biological Defense Program
Fiscal Year (FY) 2008/2009 Budget Estimates

TABLE OF CONTENTS	**i**
CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM RDT&E OVERVIEW	**iii**
R-1 EXHIBIT FOR CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	**vii**
BA1 - BASIC RESEARCH	**1**
BA2 - APPLIED RESEARCH	**37**
BA3 - ADVANCED TECHNOLOGY DEVELOPMENT (ATD)	**123**
BA4 - ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES (ACD&P)	**197**
BA5 - SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD)	**313**
BA6 - RDT&E MGT SUPPORT	**483**
BA7 - OPERATIONAL SYSTEMS DEVELOPMENT	**515**

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Department of Defense Chemical and Biological Defense Program Overview

Fiscal Year (FY) 2008/2009 Budget Estimates

The DoD Chemical and Biological Defense Program (CBDP) is a key part of a comprehensive national strategy to counter the threat of chemical and biological weapons as outlined in the National Military Strategy to Combat Weapons of Mass Destruction, February 2006. The military mission is to dissuade, deter, defend, and defeat those who seek to harm the United States, its allies, and its partners thru WMD use or threat of use and, if attacked, mitigate the effects and restore deterrence. This mission is in direct support of the three pillars (non-proliferation, counterproliferation, and consequence management) of the National Strategy for Combating WMD. The DoD CBDP provides research, development, and acquisition (RDA) programs primarily to support the counterproliferation and consequence management pillars. In support of counterproliferation, the DoD CBDP provides passive defenses tailored to the unique characteristics of the various chemical and biological weapons, including emerging threats. These capabilities provide U.S. forces the ability to rapidly and effectively mitigate the effects of a CB attack against our deployed forces. In support of consequence management, the DoD CBDP provides capabilities to respond to the effects of WMD use against our forces deployed abroad, and the homeland.

The CBDP funds research to exploit leading edge technologies to ensure that U.S. forces are equipped with world class capabilities to defend against CB threats thru the far term. This budget includes support of a comprehensive science and technology base program to ensure continued advances in CB defense capabilities. CBDP Science & Technology (S&T) research provides core capabilities to ensure U.S. technological advantages thru the far term, including research into advanced chemical and biological detection systems, advanced materials for improved filtration systems and protection systems, advanced decontaminants, investigations into the environmental fate of chemical warfare agents, advanced information technologies, medical biological defense research (including novel biodefense initiatives that focus on interrupting the disease cycle before and after exposure, as well as addressing the bioengineered threat), diagnostics, therapeutics, and vaccines for viral, bacterial, toxin, and novel threat agents), and medical chemical defense (including investigations of low level chemical warfare agent exposures, diagnostics, therapeutics, pretreatments for classical chemical warfare threats and novel threat agents).

The CBDP also supports numerous Defense Technology Objectives (DTOs), which represent the key science and technology base programs for demonstrating advanced capabilities in the near and mid-term. During FY08, DTOs support operational capabilities to Sense (Reconnaissance, Detection and Identification), Shape (Battle Management), Shield (Individual & Collective Protection), and Sustain (Decontamination & Restoration) U.S. forces for passive defense, force protection, and consequence management missions. During FY08, the CBDP supports DTOs including capabilities for Environmental Fate of Nontraditional Agents, Chemical Warfare Agent Operational Exposure Hazard Assessment Research, Hazard Prediction with Nowcasting, Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies, Western and Eastern Equine Encephalitis Vaccine Constructs for a Combined Equine Encephalitis Vaccine, Therapeutics for Ebola and Marburg Virus Infections, Multiagent (Molecular) Vaccines for Biowarfare Agents, and Chemical and Biological Hazard Environment Prediction.

Technologies currently in Budget Activity 4 (Advanced Component Development and Prototypes) and Budget Activity 5 (System Development and Demonstration) provide leading edge tools that will enhance CB defense capabilities for U.S. forces in all CB defense missions in the near-term. The response to chemical and biological threats requires tailored approaches that recognize the fundamental differences between chemical and biological weapons (and even the different types of these threats). This budget details the comprehensive array of systems under development essential to support principles of contamination avoidance, protection, and decontamination.

Key systems in Budget Activity 4 and Budget Activity 5 in FY08 include: the Joint Chemical Agent Detector (JCAD) for portable point chemical agent detection, Joint Effects Model (JEM) and Joint Operational Effects Federation (JOEF) to provide risk management tools to the warfighter, Counterproliferation Advanced Concept Technology Demonstrations (ACTDs), Joint Service Sensitive Equipment Decontamination (JSSED), Joint Portable Decontamination System (JPDS), Joint Platform Interior Decontamination (JPID), Joint NBC Reconnaissance System (JNBCRS) Increments II and III, Advanced Anticonvulsant System (AAS), Bioscavenger, Improved Nerve Agent Treatment System (INATS), biological defense vaccines (including botulinum vaccine and plague vaccine) as part of the Joint Vaccine Acquisition Program (JVAP), Critical Reagents Program (CRP) to support development of reagents for biological detection and diagnostic systems, Joint Service Chemical/Biological/Radiological Agent Water Monitor (JCBRAWM), Joint Bio Tactical Detection System (JBTDS), Joint Warning and Reporting Network (JWARN), Joint Expeditionary Collective Protection (JECP), Joint Service Aircrew Mask (JSAM) and Medical Radiological Countermeasures.

In FY08, the CBDP will start or continue procurement on a variety of CB defense systems intended to provide U.S. forces with the best available equipment to survive, fight, and win in CB contaminated environments. Systems beginning procurement in FY08 include JCBRAWM, JNBCRS Increment II, and JOEF. Systems continuing procurement in FY08 include JSAM, Multi-Service Radiacs (MSR), Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS), the Joint Effects Model (JEM), Joint Service General Purpose Mask (JSGPM), JWARN, Joint Biological Agent Identification and Diagnostic System (JBAIDS), Joint Service Mask Leakage Tester (JSMLT), Joint Service Lightweight Integrated Suit Technology (JSLIST), the NBC Reconnaissance Vehicle (NBCRV), JNBCRS Increment I, Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD), Joint Bio Point Detection System (JBPDS), biological defense vaccines, CB Protective Shelters (CBPS), Collective Protective Field Hospitals (CPFH), Collective Protection System Backfit (CPSBKFT), Joint Service Personnel/Skin Decontamination System (JSPDS), JCAD, CRP, Joint Service Chemical Environment Survivability Mask (JSCESM), and chemical and biological defense equipment for installation force protection.

Overall, the FY 2008 President's Budget achieves a structured, executable, and integrated medical and non-medical joint CB Defense Program that balances urgent short-term procurement needs that include securing the homeland from terrorist attack, and long-term S&T efforts to mitigate future CB attacks. A key element of the program is the Transformational Medical Technologies Initiative (TMTI). This program is a major FY06 Quadrennial Defense Review initiative for the development of new technologies to reduce risk from the likely emergence of genetically engineered or manipulated biological agents.

The program supports our commitment to ensure full dimensional protection for all our fighting men and women operating at home and abroad under the threat of chemical and biological weapons. All of these capabilities are integrated as a family-of-systems essential to avoid contamination and to sustain operational tempo on an asymmetric battlefield, as well as satisfy emerging requirements for force protection and consequence management. In summary, 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 long term investment in technology.

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APPROPRIATION: 0400D Research, Development, Test & Eval, Defense Wide **Date: February 2007**

Line No	Program Number	Item	Budget Activity	FY 2006	FY 2007	FY 2008	FY 2009
				Thousands of Dollars			
006	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	91,281	104,257	72,003	59,191
	Basic Research			**91,281**	**104,257**	**72,003**	**59,191**
014	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	240,904	258,862	305,327	216,705
	Applied Research			**240,904**	**258,862**	**305,327**	**216,705**
034	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	3	227,204	235,760	232,302	388,487
	Advanced Technology Development (ATD)			**227,204**	**235,760**	**232,302**	**388,487**
075	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	4	127,371	80,407	57,160	42,467
	Advanced Component Development and Prototypes (ACD&P)			**127,371**	**80,407**	**57,160**	**42,467**
104	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (SDD)	5	250,752	212,369	247,935	242,266
	System Development and Demonstration (SDD)			**250,752**	**212,369**	**247,935**	**242,266**
145	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	6	90,298	82,521	99,053	100,889
000	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	10,212	0	0	0
	RDT&E Mgt Support			**100,510**	**82,521**	**99,053**	**100,889**
172	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	7	9,671	7,008	7,716	10,359
	Operational Systems Development			**9,671**	**7,008**	**7,716**	**10,359**
	Total Chemical and Biological Defense Program			**1,047,693**	**981,184**	**1,021,496**	**1,060,364**

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BUDGET ACTIVITY 1
BASIC RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	91281	104257	72003	59191	55484	52990	56651	54348	Continuing	Continuing
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	26823	26987	24324	24424	24350	23167	26836	25681	Continuing	Continuing
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	53873	66569	35241	22388	18131	17480	16942	15616	Continuing	Continuing
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	10585	10701	12438	12379	13003	12343	12873	13051	Continuing	Continuing

A. <u>Mission Description and Budget Item Justification:</u> This program element (PE) funds the Joint Service core research program for chemical and biological (CB) defense (medical and physical sciences). The basic research program aims to improve the operational performance of present and future Department of Defense (DoD) components by expanding knowledge in relevant fields for CB defense. Moreover, basic research supports a Joint Force concept of an integrated, supportable, highly mobile force with enhanced performance by the individual soldier, sailor, airman, or marine. Specifically, the program promotes theoretical and experimental research in the chemical, biological, medical, and related sciences.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

Research areas are aligned and prioritized to meet Joint Service needs as stated in mission area analyses and Joint operations requirements, and to take advantage of scientific opportunities. Basic research is executed by government laboratories, industry, and academia to include; Historically Black Colleges and Universities and Minority Institutions (HBCU/MIs). Funds directed to these laboratories and research organizations capitalize on scientific talent, specialized and uniquely engineered facilities, and technological breakthroughs. The work in this program element is consistent with the Chemical Biological Defense Program Research, Development, and Acquisition (RDA) Plan. Basic research efforts lead to expeditious transition of the resulting knowledge and technology to the applied research (PE 0602384BP) and advanced technology development (PE 0603384BP) activities. This project also covers the conduct of basic research efforts in the areas of real-time sensing and diagnosis and immediate biological countermeasures. The projects in this PE include basic research efforts directed toward providing fundamental knowledge for the solution of defense-related problems and new-improved military capabilities, and therefore, are correctly placed in Budget Activity 1.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	94366	99182	79149	64565
FY08 President's Budget	91281	104257	72003	59191
Total Adjustments	-3085	5075	-7146	-5374
a. Congressional General Reductions	0	-15395	0	0
b. Congressional Increases	0	20470	0	0
c. Reprogrammings	-869	0	0	0
d. SBIR/STTR Transfer	-918	0	0	0
e. Other Adjustments	-1298	0	-7146	-5374

Change Summary Explanation:

Funding: N/A - Adjustments less than 10% of total program.

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	26823	26987	24324	24424	24350	23167	26836	25681	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH): This project funds basic research in chemistry, physics, mathematics, life sciences, and fundamental information in support of new detection concepts for chemical and biological agents; advanced concepts in individual and collective protection; new concepts in decontamination; innovative concepts in modeling and simulation; and scientific discovery on the chemistry and toxicology of threat agents and related materials.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	12279	10865	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Photoscrub - Conducted basic research of an innovative technology based upon the ultraviolet light induced catalytic ionization of titanium dioxide.	990	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
CBDP Basic Research Initiative - FY 06 - Solicited proposals from degree-granting universities, nonprofit organizations, and commercial concerns, to include small businesses, in support of the Chemical and Biological Defense Program (CBDP) for chemical and biological defense science and technology projects across a wide-range of military operations. FY 07 - Refine proposals from degree-granting universities, nonprofit organizations, and commercial concerns, to include small businesses, in support of the CBDP to explore new and innovative ideas to fill identified technology gaps.	6931	4951	0	0
Fluorescence Activated Sensing Technology (FAST) Integrated Threat Management System - FY 06 - Refined the multi-phased basic research program that included Deoxyribonucleic acid (DNA) amplification, using multiple displacement amplification (MDA) technology, of anthrax, staph. aureus with the Staph. Enterotoxin B (SEB) gene, tularemia, plague and a smallpox surrogate. Evaluated the detection system for the above threat agents using fluorescent probes; evaluated techniques consistent with the FAST process to identify Ribonucleic acid (RNA) viruses, protein toxins and nerve and mustard agents; developed a prototype stand-alone instrument with an integrated air sampler and sonicator and a decision and control system with external communications. FY 07 - Enhance and evaluate the prototype stand-alone instrument with an integrated air sampler and sonicator and a decision and control system with external communications.	1981	991	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
Detection of Biological Agents in Water - FY 06 - Smart Sensors and Integrated Microsystems (SSIM) - Investigated the basic techniques required to measure the Raman signature of a wide array of bio-chemical agents, including bacteria, viruses, and biological and chemical toxins, over a full spectra of excitation wave lengths ranging from the deep UV thru the near IR regions of the electromagnetic spectra in potable water sources. FY 07 - Refine investigation of the basic techniques required to measure the Raman signature of a wide array of bio-chemical agents, including bacteria, viruses, and biological and chemical toxins, over a full spectra of excitation wave lengths ranging from the deep UV thru the near IR regions of the electromagnetic spectra in potable water sources.	1386	1486	0	0
New York Structural Biology Center - FY 06 - Continued a basic research program that leverages exceptional sensitivity and resolution of high-yield Nuclear Magnetic Resonance Spectrometers (NMRS) technology to permit atomic-level structural characterization of chemical compounds. Validated protocols that monitor the fate of chemical and biological warfare agents in battlefield and civilian environments such as concrete, asphalt, soil and water. FY 07 - Refine the basic research program that leverages exceptional sensitivity and resolution of high-yield NMRS technology to permit atomic-level structural characterization of chemical compounds.	991	1159	0	0
FY 07 - Next Generation Protective Gear Research.	0	991	0	0
FY 07 - Organic Light Emitting Receptor Based Nanosensors.	0	1287	0	0
Total	**12279**	**10865**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

	FY 2006	FY 2007	FY 2008	FY 2009
Basic Research Core	0	0	24324	24424

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 08/09 - Integrated Basic Research - Leveraging efforts undertaken in previous Basic Research efforts, initiate a multi-faceted, integrated, and cross-cutting program involving industry, academia, and federally funded research efforts to determine best basic research investments and integration into the core applied research program.	0	0	8324	8424
FY 08/09 - Integrated Basic Research - Initiate and continue to leverage previous Basic Research efforts in fundamental phenomena to address requirements for the Transformational Countermeasure Technologies Initiative (TCTI).	0	0	16000	16000
Total	**0**	**0**	**24324**	**24424**

	FY 2006	FY 2007	FY 2008	FY 2009
Threat Agent Science	14544	15856	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Threat Agent Science - FY 06/07 - Investigated genetic and biochemical variability as a potential new source of exploitable signatures and characterized the population dynamics of bacterial germination and migration within the body (toxicokinetics) and infection of target tissue under natural and altered physicological states (toxicodynamics). Continue investigation of toxicokinetics and toxicodynamics. In FY 08, program name changes to Basic Research Core.	1140	1165	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Integrated Basic Research - FY 06/07 - Integrated a cross-cutting program involving industry, academia, and federally funded research efforts to determine best basic research investments and integration into the core applied research program. Continue research efforts to determine best basic research investments and integration into the core applied research program. In FY 2008, program name changes to Basic Research Core.	5060	6226	0	0
Detection Science - FY 06/07 - Initiated investigation of nano-technologies as sensors and investigation of a theory-guided approach to the design of molecular sensing devices and systems. Continue investigation of nano-technologies use as sensors and design theory studies.	1155	1180	0	0
Modeling/Simulation Science - FY 06/07 - Conducted basic research to understand fundamental relationships of atmospheric phenomena, linked equations of motion for terrestrial and space environments, investigated relationships between sensor data and dispersion forecasts, and improved the basic understanding of atmospheric turbulence in the stable boundary level. Continue basic research and improve basic understanding of atmospheric turbulence in the stable boundary level.	3750	3775	0	0
Special Projects (Nano-technology Initiative) - FY 06/07 - Initiated a survey on the $1-Billion federal government's annual investment in nano-technology, developed a knowledge base for nano-technology research relative to chemical-biological defense, and leveraged identified nano-science and nano-technologies from sources identified by the survey. Continue to leverage identified nano-science and nano-technologies from sources identified by the survey.	2470	2495	0	0
Decontamination Science -	969	1015	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06/07 - Investigated the growth of hydrophobic polymer chains from enzymes as solvent-soluble decontaminating biocatalysts, and characterized the reactions between vaporous hydrogen peroxide and chlorine dioxide on metallic, metal-oxide and polymeric surfaces. Continue investigating the growth of hydrophobic polymer chains from enzymes as solvent-soluble decontaminating biocatalysts, and characterize the reactions between vaporous hydrogen peroxide and chlorine dioxide on metallic, metal-oxide and polymeric surfaces.	969	1015	0	0
Total	**14544**	**15856**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	266	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	266	0	0
Total	**0**	**266**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
CB1

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	123291	128766	114744	113870	100816	91998	94854	95173	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	105134	113081	20662	21028	21935	14241	14310	13823	Cont	Cont
TT3 TECHBASE TECHNOLOGY TRANSITION	13661	12623	7667	8150	8463	8329	9430	9533	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	53873	66569	35241	22388	18131	17480	16942	15616	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH): This project area funds basic research which seeks to promote the development of vaccines and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. This basic research advances promising biotechnology with the potential to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project area include core science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics) and directed research areas such as the Transformational Medical Technologies Initiative (TMTI). The TMTI was launched in FY06 as a key Quadrennial Defense Review initiative to respond to the threat of emerging or intentionally bioengineered biological threats. It augments the core science and technology area by expanding the novel programs currently funded under the core Therapeutics program and introducing new technologies for developmental focus. TMTI is a novel experiment to develop drugs that are broad spectrum in nature by using non-traditional and high risk approaches to accelerate the development and licensure of new medicines. The basic research supported by the TMTI is focused on delineating the pathogenic mechanisms of intracellular pathogens and hemorrhagic fever viruses. Teaming the core program and TMTI provides a complementary strategy (single agent versus broad spectrum, conventional versus emerging threats and established model systems versus expanded integration of novel technology, respectively) towards the development of effective medical countermeasures against biothreat agents.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	9709	9410	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Vaccine Development Program - Developed a non-live virus vaccine for smallpox using a poxvirus antigen that is conjugated to antigen presenting cell (APC)-binding antibodies.	991	0	0	0
FY 06 - Monoclonal Antibody Manufacturing for the Treatment of Emerging Infections.	991	0	0	0
FY 06 - DNA Safeguard Project at Boise State University - Developed a stable, DNA-based chemical marker (DNA barcode) capable of encoding information that can be added to any DNA sample in order to label the sample and guarantee its integrity.	991	0	0	0
FY 06 - Ricin & Anthrax Countermeasures - Determined the in vivo efficacy of Phosphorodiamidate Morpholino Oligomers (PMOs) as effective countermeasures for Ricin and Anthrax.	1981	0	0	0
FY 06 - Biomarker Molecular Toxicology Initiative - Studied reactions to chemical and biological perturbations and then correlated these with the levels of organ-specific secreted proteins for the relevant organ (liver, kidney, etc).	2773	0	0	0
FY 06 - Selective Biological Countermeasures - Developed a procedure which will measure drug-protein binding between host proteins and pharmaceuticals.	991	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
Northeast Biodefense Center - FY 06 - Increased laboratory capacity so that urgent local, national and global needs can be met without compromising ongoing research programs. Key research objectives include: establishing new technologies for producing monoclonal antibodies for passive administration; establishing new technologies for rapid active immunization employing dendritic cell, macrophage and B-cell interactions; discovering novel therapeutic preventive and immunomodulatory targets and molecules for bacterial and viral pathogens. FY07 - Increased laboratory capacity so that urgent local, national and global needs can be met without compromising ongoing research programs. Key research objectives include: establishing new technologies for producing monoclonal antibodies for passive administration; establishing new technologies for rapid active immunization employing dendritic cell, macrophage and B-cell interactions; discovering novel therapeutic preventive and immunomodulatory targets and molecules for bacterial and viral pathogens.	991	991	0	0
FY 07 - Anthrax Vaccine Research.	0	496	0	0
FY 07 - Mismatch Repair Derived Medicines to treat Clostridium, Staphylococcus and Bacillus Bioweapons.	0	1981	0	0
FY 07 - UCLA High Speed, High Volume Laboratory Network for Infectious Diseases - Initiate development of a high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions.	0	5942	0	0
Total	**9709**	**9410**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
Transformational Medical Technology Initiative	27205	33008	23001	10211

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Multiagent (Broad Spectrum) Medical Countermeasures -	27205	33008	23001	10211
FY 06 - Initiated efforts to identify common biomarkers for several broad classes of Pathogenic Agents (e.g. intracellular facultative bacilli, hemorrhagic viruses). Initiated development of a systematic evaluation of pathogen biomarkers for categories of Biological Warfare (BW) Pathogenic Agents that tie to commonality in pathogenic mechanisms of action. Started a program to develop in silico and other methodologies to predict three-dimensional structure and comparative assessment of virulence moieties on important protein virulence molecules from genetic sequences. Commenced assessing the feasibility of re-engineering host cellular response patterns that have been compromised by pathogen-directed shifts in pathways (e.g., override of host apoptosis (programmed cell death) pathways, immune down-regulation, signal transduction agonists/antagonists, etc.).				
FY 07 - Continue to identify common biomarkers for several broad classes of Pathogenic Agents with specific applications to intracellular facultative bacilli and hemorrhagic viruses. Develop a problem solving approach that will focus on four major modules of broad-spectrum effort (host immune response, small molecule therapeutics, nucleotide therapeutics, protein based therapeutics) with the emphasis on developing adaptive technology to speed drug approval process and next generation break-thru technology. Accelerate a systematic evaluation of pathogen biomarkers for categories of BW Pathogenic Agents that tie to commonality in pathogenic mechanisms(s) of action. Identify primary or common host pathways/networks that respond to pathogenesis events to uncover promising intervention points for broad-spectrum therapeutic approaches. Exploit advances in genomics, proteomics and systems biology studies to identify pathogenesis pathways and networks using two classes agents (hemorrhagic fever virsuses and intracellular bacterial pathogens) as model systems. Pursue collaborations and continue development of in silico and other methodologies to predict three-dimensional structure and comparative assessment of virulence moieties on important protein virulence molecules from genetic sequences. Build on knowledge of host cellular response patterns that have been compromised by pathogen-directed shifts in pathways.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Apply knowledge on common biomarkers for broad classes of Pathogenic Agents to specific species of intracellular facultative bacilli and hemorrhagic viruses. Validate problem solving approach focusing on four major modules of broad-spectrum effort (host immune response, small molecular therapeutics, nucleotide therapeutics, protein based therapeutics). Assess the systematic evaluation of pathogen biomarkers for categories of BW Pathogenic Agents that tie to commonality in pathogenic mechanisms(s) of action. Relate primary or common host pathways/networks that respond to pathogenesis events to uncover promising intervention points for broad-spectrum therapeutic approaches. Continue to mine advances in genomics, proteomics and systems biology studies. Solidify collaborations of in silico and other methodologies to predict three-dimensional structure and comparative assessment of virulence moieties on important protein virulence molecules from genetic sequences. Collate knowledge of host cellular response patterns that have been compromised by pathogen-directed shifts in pathways (e.g., override of host apoptosis (programmed cell death) pathways, immune down-regulation, signal transduction agonists/antagonists, etc.). FY 09 - Validate knowledge on common biomarkers for broad classes of Pathogenic Agents beyond intracellular facultative bacilli and hemorrhagic viruses. Continue to follow a systematic/problem solving approach towards the broad-spectrum development effort by mining advances in genomics, proteomics and systems biology studies and applying them to pathogen science; host response systems biology; adaptive technology to speed drug approval process; next generation break-through technology. Pursue promising intervention points for broad-spectrum therapeutic approaches. Continue to collate knowledge of host cellular response patterns that have been compromised by pathogen-directed shifts in pathways.	27205	33008	23001	10211
Total	**27205**	**33008**	**23001**	**10211**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	5172	4458	4990	4710

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies - FY 06 - Improved the sensitivity and specificity of existing nucleic acid and immunodiagnostic assays. Designed new nucleic acid and immunodiagnostic assays to augment pathogen detection. Continued study to identify biomarkers of immunity in individuals vaccinated against biological warfare agents (BWA). Pursued new chemistries for the identification of BWA. Verified host response markers correlating with viral infections. Advanced study to develop analytic signatures of biothreat agents. FY 07 - Expand assay design for nucleic acid and immunoassays to additional agents/targets. Continue to improve sensitivity and specificity of existing assays, as new genomic data and techniques become available. Direct research towards increasing sample concentration and extending sample viability prior to nucleic acid testing. Collate/analyze microarray data on host response to immunization from biowarfare vaccine recipients and make recommendations for follow-on studies. Direct research towards development of a microfluidic card to automate sample preparation. Investigate surface amplification methods to enhance microarray sensitivity. Investigate novel method to produce improved immunodiagnostic reagents.	5172	4458	4990	4710

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Explore new avenues for assay design and application, focusing on those that enhance sensitivity and specificity. Validate microfluidic card to automate sample preparation. Optimize surface amplification methods for selected microarrays. Accelerate development of a novel method to produce improved immunodiagnostic reagents. Assess the applicability of novel technology platforms as new genomic techniques become available. Pursue identification of novel biomarkers identifying exposure to biological pathogens. FY 09 - Continue to seek novel avenues for assay design and application. Investigate cutting edge technologies as new genomic techniques become available. Accelerate identification of novel biomarkers of BWA infection and apply to assay development.	5172	4458	4990	4710
Total	**5172**	**4458**	**4990**	**4710**

	FY 2006	FY 2007	FY 2008	FY 2009
Pretreatments	6742	9309	2292	3839

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Pretreatments, Multiagent Vaccines - FY 06 - Investigated the possible inclusion of additional bacterial, viral, and toxin components in multivalent anthrax-plague vaccines. Evaluated specific combinations of target antigens and vaccine platforms, including DNA, recombinant viruses and virus-like particles (VLPs). Assessed genomics/proteomics-based high throughput approaches to identify potential vaccine target antigens for multiple agents. Investigated the use of novel approaches including recombinant protein and fusion protein constructs. FY 07 - Evaluate trivalent vaccine formulations using anthrax/plaque and ricin, as well as other possible components. Identify additional valid target antigens for different bio-threat agents. Expand the identification of potential vaccine target antigens for multiple agents using genomics/proteomics-based high throughput approaches. Continue to assess the use of novel approaches for vaccine construction and delivery including recombinant protein and/or fusion protein constructs. FY 08 - Conduct assessment of trivalent anthrax, plague, ricin vaccine. Evaluate additional target antigens as well as adjuvant combinations for efficacy against different bio-threat pathogens. Optimize DNA-based immunization strategies against bio-threat agents. FY 09 - Continue to characterize multivalent vaccine formulations using novel adjuvants and/or delivery systems. Evaluate novel target antigens for different bio-threat pathogens. Expand DNA-based immunization strategies against bio-threat agents.	552	1760	504	845

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Pretreatments, Vaccine Technology Development -	2000	2000	481	806
FY 06 - Investigated DNA-based immunization platforms against multiple targets that stimulate protective immunity following minimal dosing. Evaluated high throughput gene expression systems for immune responses against selected bio-threat agents. Explored alternate immunization platforms for efficacy against selected biothreat agent pathogens. Identified common Bacillus-specific spore target antigens using a bioinformatics-based approach. Studied Toll-Like Receptor (TLR) agonists and other aspects of the innate immune system for vaccine construction and enhancement.				
FY 07 - Explore DNA vaccines and additional user friendly alternate immunization platforms/modalities that confer rapid protection following minimal dosing. Pursue refinement and development of approaches to identify potential vaccine target antigens. Investigate gene expression technologies for in vitro (inside a test tube) analysis of host responses to bacterial pathogens. Evaluate cell-mediated immune targeting of antigens for intracellular pathogens. Investigate the T-cell response against selected target antigens (analysis of cell-mediated immune response). Assess human immunodominant epitopes of selected bio-threat target antigens. Continue to investigate TLR agonists and other aspects of the innate immune system for vaccine construction and enhancement.				
FY 08 - Investigate DNA vaccine technologies and additional user friendly alternate immunization platforms/modalities that result in the rapid onset of an immune response. Investigate further refinement and development of approaches to identify potential vaccine target antigens. Pursue the use of immunomodulatory peptides or dendritic cell targeting peptides to enhance vaccine efficacy in animal models. Explore aspects of the innate immune response with respect to vaccine enhancement strategies. Continue the further evaluation of cell-mediated immune targeting of antigens for intracellular pathogens. Characterize the T-cell response against selected target antigens (analysis of cell-mediated immune response).				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Optimize additional user friendly alternate immunization platforms/modalities that confer rapid protection following minimal dosing. Continue refinement and development of approaches to identify potential vaccine target antigens. Study aspects of the innate immune response with respect to vaccine enhancement strategies. Explore the use of immunomodulatory peptides or dendritic cell targeting peptides to enhance vaccine efficacy. Evaluate cell-mediated immune targeting of antigens for intracellular pathogens. Characterize the T-cell response against selected target antigens (analysis of cell-mediated immune response).	2000	2000	481	806
Vaccine Research Support - Pretreatment FY 06 - Identified new target antigens for intracellular pathogens. Conducted basic studies in anthrax and plague pathogenic mechanisms. Investigated alternative delivery platform strategies for immunization. Pursued the development of next generation recombinant vaccine candidates for botulinum neurotoxins. Evaluated various platforms for compatibility with the V3526 (VEE) vaccine candidate. Characterized vaccine efficacy against Bacillus anthracis strains of diverse geographic origin. FY 07 - Evaluate gene expression technologies for in vitro analysis of host responses to bacterial pathogens. Analyze information in the genomics/bioinformatics database to aid in the design of unique target antigens. Conduct basic pathogenicity studies of selected biothreat agents. Continue B and T cell epitope mapping of lead antigen candidates. Characterize in vitro correlates of immunity for biothreat agents. FY 08 - Expand evaluation of human immune response to bacterial and viral pathogens. Continue basic pathogenicity studies of selected biothreat agents. Develop and refine in vitro correlates of immunity for vaccines under development. Identify and evaluate new target antigens for intracellular pathogens. Expand B and T cell epitope mapping to additional lead antigen candidates.	4190	5549	1307	2188

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Expand human immune responses to bacterial and viral pathogens. Continue basic pathogenicity studies of selected biothreat agents. Develop and refine in vitro correlates of immunity for new antigen in relation to vaccines under development. Pursue the identification and evaluation of novel target antigens for intracellular pathogens. Optimize epitope mapping of lead antigen candidates.	4190	5549	1307	2188
Total	**6742**	**9309**	**2292**	**3839**

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	5045	9741	4958	3628

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Viral -	500	799	595	435
FY 06 - Enhanced aerobiology capabilities and animal model development to facilitate viral therapeutics research. Optimized drug discovery assays with application to identifying and testing antivirals against threat agents. Validated potential mediators of shock and toxemia. Determined the basis for treatment of shock or toxemia in appropriate animal models. Studied the pathogenic processes associated with viral infection. Evaluated the utility of combining approaches that target different aspects of viral replication and/or disease pathogenesis.				
FY 07 - Identify host cell and viral proteins that may be susceptible to broad spectrum therapeutics. Investigate additional technologies that may integrate established and emerging viral therapeutic modalities into suitable candidate therapies in humans.				
FY 08 - Delineate the host cell response to viral infection to enhance the current understanding of viral pathogenesis, in support of therapeutic development against orthopox, filovirus, and other category A and B viral threat agents of interest. Focus on collecting data pertinent to broad spectrum countermeasure development.				
FY 09 - Focus on delineating mechanisms of pathogenesis of emerging and genetically engineered threats as therapeutics targeting specific known viral threat agents move to advanced development. Compare host response to known threats with response to genetically engineered threats to identify new therapeutic targets.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Toxin -	1267	6059	3471	2540

FY 06 - Defined and validated essential indicators of therapeutic efficacy against selected toxins. Established conceptual framework for protocol screening for therapeutic candidates that demonstrate threshold efficacy. Characterized aerosol models of disease to support toxin therapeutic development. Conducted studies to further delineate the mechanism of action of, and host response to, botulinum neurotoxin (BoNT). Performed structural analysis of ricin toxin and BoNT serotypes. Maintained the BoNT database, a centrally managed source of information to include pharmacokinetic parameters of toxin-induced paralysis and kinetic data obtained from ongoing studies with candidate therapeutic substances.

FY 07 - Refine planned therapeutic animal models, to include in vivo model instrumentation, and its interface with the developed screening protocol for lead toxin therapeutics studies. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Optimize aerosol models of disease to support toxin therapeutic development. Study the pathogenesis associated with aerosol exposure to ricin toxin. Initiate development of a mouse model for inhalational exposure to Staphylococcal enterotoxin B (SEB) using microinstillation technology. Conduct advanced structural analysis of BoNT serotypes, focusing on catalytic sites and substrate binding.

FY 08 - Continue to develop a mouse model for inhalational exposure to SEB using microinstillation technology. Initiate studies to investigate the process of intracellular targeting of BoNT, with application to development of an intracellular assay system for evaluating potential therapeutics. Investigate the restoration of synaptic activity following neuroparalysis due to BoNT intoxication. Utilize in silico modeling techniques and in vitro and in vivo assays to provide structural and molecular data to facilitate the design and development of therapeutic countermeasures against BoNT, SEB, and ricin toxin.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Improve existing in silico, in vitro, and in vivo model systems to support studies delineating mechanisms of action and host response to toxin threat agents. Complete development of a mouse model for inhalational exposure to SEB using microinstillation technology. Characterize the process of intracellular targeting of BoNT, and initiate intracellular assay model development. Determine the structural requirements of potential restorative therapeutics for neuroparalysis following BoNT intoxication.	1267	6059	3471	2540
Therapeutics, Bacterial - FY 06 - Evaluated cellular immune response to F1-V fusion protein of plague (plague vaccine). Enhanced aerobiology capabilities and animal model development to facilitate bacterial therapeutics research. Pursued development of a mouse model to study anthrax toxin function. FY 07 - Complete development of a mouse model to study anthrax toxin function. Identify virulence factors and biochemical pathways as potential targets for therapeutic countermeasures. FY 08 - Delineate host cell response to bacterial pathogenesis to identify new therapeutic targets for broad spectrum therapeutics. Demonstrate and confirm the role for selected common pathways and factors in bacterial virulence. FY 09 - Characterize new potential targets for therapeutic countermeasures, focusing on those identified for emerging and genetically engineered threats.	3278	2883	892	653
Total	**5045**	**9741**	**4958**	**3628**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	643	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TB1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	643	0	0
Total	**0**	**643**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	89183	97730	151712	63773	51565	50672	52948	52995	Cont	Cont
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	87910	89678	146539	299581	229306	129419	122230	113827	Cont	Cont

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	10585	10701	12438	12379	13003	12343	12873	13051	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH): This project emphasizes understanding of the basic action mechanisms of nerve, blister (vesicating), blood, and respiratory agents. Basic studies are performed to delineate biological mechanisms and bodily sites of action of identified and emerging chemical threats to generate required information for initial design and synthesis of medical countermeasures. In addition, these studies are further designed to maintain and extend a science base. Categories for this project include science and technology program areas in medical chemical defense capability areas (Diagnostics, Therapeutics and Emerging Threats).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	990	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Superstructural Particle Evaluation and Characterization with Targeted Reaction Analysis (SPECTRA) - Studied antioxidants (combined with other substances) to mitigate the effects of low doses of radiation on human cells and E.coli. Investigated the effects of potential bio-protective substances and combinations on human and microflora cell-level responses to radiation stressors.	990	0	0	0
Total	**990**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	269	298	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies - FY 06 - Continued basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare agent (CWA) exposure. Reported on the potential for detecting sulfur mustard exposure by cleavage adducts formed with blood proteins. Studied the dose response and time course for skin protein (laminin-5 and integrin) degradation resulting from sulfur mustard exposure. FY 07 - Accelerate basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from CWA exposure. Evaluate the hypothesis that analysis of hair samples can be used to verify exposure to CWA.	269	298	0	0
Total	**269**	**298**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

	FY 2006	FY 2007	FY 2008	FY 2009
Emerging Threats	1785	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Emerging Threats, Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - FY 06 - Studied non-traditional convulsive agents to identify their oxidative metabolism. Studied the pathophysiology of additional classes of NTAs. Transitions to Therapeutics in FY07.	1285	0	0	0
Emerging Threats, Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - FY 06 - Completed studies of medical countermeasures that minimize the effects of low level chemical exposure. Determined the effects of repeated exposure to chemical agents on central nervous system gene and protein expression in rodents. Transitions to Therapeutics in FY07.	500	0	0	0
Total	**1785**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	7541	10299	12438	12379

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Respiratory and Systemic -	2172	3426	4975	4952
FY 06 - Established exposure/effects models from the whole sequence of in vitro to in vivo systems, to identify common injury responses which may serve as broad targets for therapeutic intervention. Investigated and developed additional technologies that may be used to integrate established and emerging toxicant therapeutic modalities into suitable candidate therapies in humans. Reviewed commercially evaluated human tissue models for applicability to medical chemical defense research, including the study of inhalation exposure to chemical warfare agents and evaluation of therapeutic countermeasures.				
FY 07 - Utilize exposure/effects models to further delineate the mechanisms of injury following chemical warfare agent exposure. Pursue additional technologies that address both the direct pulmonary injury and systemic effects of chemical warfare agents, with a focus on identifying common sites for therapy at the tissue, cellular, and sub-cellular levels of injury. Initiate research into the molecular basis of injury (pulmonary) in small (rat) and large (swine) animal models. Isolate and culture non-commercial human lung tissue to improve upon existing human tissue models.				
FY 08 - Develop additional in vitro and in vivo model systems to identify new therapeutic targets, based on findings from mechanism of injury studies and focusing on common injury pathways. Investigate long term effects of pulmonary injury in large and small animal models, collecting toxicological, physiological, and biochemical data.				
FY 09 - Expand efforts to elucidate common injury pathways due to multiple agents and routes of exposure, to maximize application to the development of broad-based therapeutics.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Cutaneous and Ocular -	3673	2919	1244	1237
FY 06 - Explored pharmacological strategies of vesicant therapeutics, to include percutaneous, ocular, and pulmonary exposures. Analyzed in vitro effects of sulfur mustard agent on cellular energy metabolism, and apoptotic (cell death) pathways. Studied in vitro biochemical changes induced by sulfur mustard exposure.				
FY 07 - Develop animal models for cutaneous, percutaneous and ocular exposure. Optimize in vitro tissue assays with application to identifying potential therapeutic compounds. Conduct studies to correlate gene expression and histopathology of sulfur mustard exposure. Investigate the genotoxicity of agent exposure in ocular cells. Initiate toxicogenomic studies to characterize the phases of wound healing. Identify the location of dermal and sub-dermal reservoirs of chemical agents.				
FY 08 - Optimize animal models for cutaneous, percutaneous and ocular exposure. Explore novel cellular biochemical pathways as potential targets for therapeutic intervention. Maximize strategies to extend "latency" period between exposure and certain injury. Expand the study of genotoxicity of agent exposure to cutaneous cells.				
FY 09 - Extrapolate the results of genotoxicity studies to the development of cancerous conditions using the appropriate in vivo models.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Neurologic - FY 06 - Investigated novel targets for pharmacologic measures to protect against organophosphate injury, using animal neurobehavioral, physiological, and neuroanatomical measures. Characterized the mechanism of protection seen with successful therapeutic candidates. Utilized current and novel approaches to molecular modeling and structure activity relationship (SAR) studies of oxime reactivation of nerve agent inhibited acetylcholinesterase (AChE), with the goal of understanding how different oximes interact with human and non-human AChE inhibited by different nerve agents. FY 07 - Improve molecular modeling capabilities, coupled with X-ray crystallographic analysis and site directed mutagenesis, for rational drug design of new neurologic therapeutics. Optimize in vitro and in vivo laboratory techniques that may be applied to develop neuroprotectants, anticonvulsants, and broad spectrum reactivators to reduce or prevent injury from nerve agents. Study known mechanisms of cell death to identify potential therapeutic targets. Develop strategies for medical intervention to prevent seizures and minimize related neuronal injury in animal models. Evaluate therapeutic delivery systems targeting the central nervous system. FY 08 - Exploit data from SAR studies to delineate commonality between agents and oximes. Delineate general mechanism of action for oxime reactivation as required to support FDA submissions for improved reactivators under the Animal Rule. FY 09 - Research mechanisms of action of nerve agents and therapeutic interventions using whole animal models, with a focus on data required to support FDA submissions under the Animal Rule.	1696	1173	1286	1291
Therapeutics, Medical Toxicology - Non Traditional Agents (NTAs) and Other Agents - FY 07 - Conduct exploratory and comparative studies of emerging non-traditional chemical nerve agents. Focus on structure, function, and mechanism of action.	0	2781	3731	3714

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Collect mechanistic and kinetic data derived from chemical agent exposure studies. Initiate exploratory studies to determine the mode/mechanism of action of NTAs. FY 09 - Demonstrate the biological equivalency of NTA toxicity mechanisms across relevant species.	0	2781	3731	3714
Therapeutics, Medicinal Chemistry Core Capability - FY 08 - Synthesize new compounds, and analogs of existing compounds, designed as potential therapeutic countermeasures against a variety of chemical and biological warfare agents. Synthesis is customized to the needs of scientists working in all areas of chemical and biological defense within the DoD system. Characterize compounds using state-of-the-art analytical techniques (i.e. gas/liquid chromatography-tandem mass spectrometry, nuclear magnetic resonance spectroscopy, etc.). Test compounds for toxicity in silico and in vitro. FY 09 - Test the synthesis, characterization, and toxicity of potential therapeutic countermeasures.	0	0	1202	1185
Total	**7541**	**10299**	**12438**	**12379**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	104	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	104	0	0
Total	**0**	**104**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA1 - Basic Research

PE NUMBER AND TITLE
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)

PROJECT
TC1

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	27172	30796	36881	37072	35033	33328	38282	38614	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	20499	18225	28976	28526	29218	30777	31833	32133	Cont	Cont

BUDGET ACTIVITY 2
APPLIED RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	240904	258862	305327	216705	189404	177988	188074	188771	Continuing	Continuing
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	123291	128766	114744	113870	100816	91998	94854	95173	Continuing	Continuing
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	89183	97730	151712	63773	51565	50672	52948	52995	Continuing	Continuing
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	27172	30796	36881	37072	35033	33328	38282	38614	Continuing	Continuing
TR2	MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)	1258	1570	1990	1990	1990	1990	1990	1989	Continuing	Continuing

A. <u>Mission Description and Budget Item Justification:</u> The use of chemical and biological weapon systems in future conflicts is an increasing threat. Funding under this PE sustains a robust program, which reduces the danger of a chemical and/or biological (CB) attack and enables U.S. forces to survive and continue operations in a CB environment. The medical program focuses on development of vaccines, pretreatments, therapeutic drugs, and on casualty diagnosis, patient decontamination, and medical management. In the physical sciences area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection systems. This program also provides for applied research in the areas of real-time sensing and immediate biological countermeasures. This PE also provides concept and technology demonstrations of new system concepts that will shape the development for environmental monitoring, medical surveillance, and data mining/fusion/analysis subsystems. 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). This project includes non-system specific development directed toward specific military needs and therefore is correctly placed in Budget Activity 2.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	246953	280422	214036	191991
FY08 President's Budget	240904	258862	305327	216705
Total Adjustments	-6049	-21560	91291	24714
a. Congressional General Reductions	0	-56010	0	0
b. Congressional Increases	0	34450	0	0
c. Reprogrammings	1428	0	0	0
d. SBIR/STTR Transfer	-2403	0	0	0
e. Other Adjustments	-5074	0	91291	24714

Change Summary Explanation:

Funding: FY08 - Realignment in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (+$69,096K TB2).
Other fund adjustments and realignments (+$19,070K CB2; +$6,142K TB2; -$2,046K TC2; -$971K TR2).

FY09 - Fund adjustments and realignments (+$22,684K CB2; +$8,936K TB2; -$4,346K TC2; -$2,560K TR2).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	123291	128766	114744	113870	100816	91998	94854	95173	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH): This project addresses the urgent need to provide all services with defensive materiel to protect individuals and groups from Chemical and Biological (CB) threat agents in the areas of detection, identification and warning, contamination avoidance via reconnaissance, individual and collective protection, and decontamination. The project provides for special investigations into CB defense technology to include CB threat agents, operational sciences, modeling, CB simulants, and CB survivability. Of special interest are two Defense Technology Objectives (DTOs) described as follows: (1) The fate of Chemical Warfare (CW) agents following deposition onto natural and man-made materials found in operational environments including battlefields and air bases and (2) toxicological effects resulting from low-level exposure to CW agents as well as the relationships between concentration and total exposure as measured by the product of concentration and time. This project focuses on horizontal integration of CB defensive technologies across the Joint Services. The DTOs provide a means to shape the development of selected technologies within this project. Beginning in 2007, the group heading for Modeling and Simulation/Battle space Management was changed to Information Systems Technologies to be compatible with Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) Joint Program Manager - Information Systems.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	28221	25803	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Omni Spray Development of Desportion Electro-Spray Ionization (DESI). Developed DESI mass spectrometry as a means to analyze samples, in many cases without the need for sample preparation, for the rapid detection and identification of chemical warfare agents.	991	0	0	0
FY 06 - Warfare Agents Program (Defense Research Program) - Established a state-of-the-art mass spectrometer to be used for revolutionary studies on the detection and identification of potentially harmful bio-warfare and chemical agents facility for the rapid detection and identification of biological and chemical warfare agents and to develop procedures to combat their actions.	991	0	0	0
FY 06 - System for Bacterial Warfare Agent Detection - Conducted collaborative research and development to detect and identify microorganisms of military significance. Optimized a standardized process for real-time detection and identification of Bacterial Warfare Agents (BWA).	446	0	0	0
FY 06 - Nanotechnology for Detection of BW Agents - Evaluated selected representative sampling and analysis methods that are currently available, tested modifications to existing protocols, and determined optimal surface sampling and analysis strategies to maximize the detection of the target microbial agents in environmental samples.	1585	0	0	0
FY 06 - Chem-Bio Disinfection/Neutralization Effort - Provided rapid disinfection-neutralization of the threat posed by biological agents under varied scenarios including large buildings and transport facilities in an urban environment and the battlefield.	1050	0	0	0
FY 06 - Real-Time Non-Specific Viral Agent Detector - Developed and published protocols for non-enveloped viruses from naturally occurring sources using VDSC-1 virus detection technology.	991	0	0	0
FY 06 - Research on Molecular Approach to Hazardous Materials Decontamination - Continued research into the use of multi-phase systems for decontamination. Evaluated the combinations of agent/surfactant/water and agent/solid/surfactant/water.	991	0	0	0
FY 06 - Quantum Fingerprint Technology for Chem-Bio Sensing - Assessed the feasibility of using this technology for real-time monitoring of chemical agent vapors and biological agent aerosols.	1055	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
FY 06 - Self Decontaminating Polymer System for Chemical and Biological Warfare Agents - Developed self-decontaminating, smart polymer coating systems for textiles and other structural materials capable of destroying chemical and biological warfare agents (CWAs/BWAs) on contact.	2864	0	0	0
FY 06 - Ion Mass Spectrometry (IMS) Sample Concentration and Bioagent Detection - Designed, constructed, and demonstrated a prototype water bioagent detector based on the new technologies identified and evaluated during the initial FY05 period of performance.	991	0	0	0
FY 06 - Vulnerability Determination for Air Vehicle Contamination - Assessed technology to detect hazardous chemical agents, including volatile odor signature agents, their Biochemical Sensors for the detection of chemical/biological (C/B) contamination during Aircraft Operations thru Advanced Bioreporter Technology.	991	0	0	0
FY 06 - Portable CB Detection Sensor System - Developed novel CB sensors for early warning monitoring and integration onto unmanned robotic platforms and navigation and guidance algorithms for mine clearing/IEDs/bio-hazards in GPS-denied areas. Designed and manufactured an interface for chemical and biological sensor payload for omni-directional vehicles. Developed omni-directional motion planning algorithms for sample acquisition scenarios. Developed and implemented Joint Architecture for Unmanned Systems (JAUS) protocols for universal chemical and biological sensor payload interfaces.	1387	0	0	0
Zumwalt Program for Countermeasures to Biological and Chemical Threats - FY 06 - Developed new models and sensor systems for the detection and identification of chemical and biological hazardous materials. FY 07 - Improve model development and sensor systems for the detection and identification of chemical and biological hazardous materials.	1387	1288	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Low-Cost Protective Chem-Bio Shelters - FY 06 - Conducted an extensive survey of candidate technologies for shelter applications that are low cost, and that provide the opportunity for reducing the size, weight, and power requirements of shelter systems. Down-selected candidates to the most promising technologies and initiated evaluation of those technologies for target applications. FY 07 - Refine evaluation of down-selected technologies for target applications.	3470	2575	0	0
Theater Level Modeling of Chemical and Biological Operational Effects at the Level of Individual Soldier - FY 06 - Developed algorithms and code-based tools to leverage the benefits of CBROE modeling methods into theater-level warfare models. FY 07 - Refine development algorithms and code-based tools to leverage the benefits of CBROE modeling methods into theater-level warfare models.	496	991	0	0
Chemical Biological Defense Program Initiative Fund - FY 06 - Solicited and awarded contracts for proposals from degree-granting universities, nonprofit organizations, or commercial concerns to include small businesses, in support of the Chemical and Biological Defense Program (CBDP) to fund chemical and biological defense science and technology projects across a wide-range of military operations. FY 07 - Refine proposals from degree-granting universities, nonprofit organizations, or commercial concerns to include small businesses, in support of the CBDP to fund chemical and biological defense science and technology projects across a wide-range of military operations.	6950	9902	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
Nanowire Mesh Fabrics for Chem/Bio Defense - FY 06 - Fabricated barrier materials employing wire mesh technology and assessed their efficacy against chemical warfare agent simulants. Down-selected best candidate material configurations and optimize to improve protective barrier characteristics. Conducted assessment of optimized materials against simulants and chemical warfare agents. FY 07 - Refine assessment of optimized materials against simulants and chemical warfare agents.	1585	991	0	0
FY 07 - Escape Hood.	0	1783	0	0
FY 07 - Fault Protected Drives for Laser Diodes for Defense Use.	0	991	0	0
FY 07 - Specific Gas Detector.	0	991	0	0
FY 07 - Personal Protection Against Infectious Agents.	0	1783	0	0
FY 07 - Chemical Warfare Agent Fate Model Verification and Validation Phase 2.	0	991	0	0
FY 07 - Chemical/Biological Infrared Detection System.	0	1090	0	0
FY 07 - ND Center for Environmental Networked Embedded Sensor Technology (CENEST).	0	2427	0	0
Total	**28221**	**25803**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
Information Systems Technology	28608	25648	25545	26863

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Information Systems Technology, CBDP Decision Capability -	4192	2686	10421	12919
FY 06 - Continued building the analytical framework. Initiated development of a representative sensor prototype model. Continued to identify gaps in capability to conduct rapid program analysis and feasibility assessments for tool(s) development. Initiated development of selected model and database linkages between analytic framework and decision support personnel. Demonstrated the architecture of the multivariate decision support tool and developed a prototype. Developed High Level Architecture (HLA) federates and components for the CB urban experimental and evaluation simulation.				
FY 07 - Continue building the analytical framework. Continue to identify gaps in capability to conduct rapid program analysis and conduct feasibility assessments for tool(s) development. Continue development of representative prototype models for each of the capability areas. Identify critical enhancements based upon the early prototype of the multivariate decision support tool. Develop the Joint Semi-Automated Forces (JSAF) plug-ins and Urban Resolve capability for the urban experimental and evaluation simulation. Transition capability to Joint Effect Model (JEM).				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Complete user-driven requirements analysis and develop prototype CBRN Investment Planning and Analysis Tool. Initiate medical modeling area of research. Verify Nuclear Biological Chemical Casualty and Resource Estimation Support Tool (NBC CREST) 5.0, a set of human response models for CBRN agent exposure, based on NATO's Allied Medical Publication 8 (AMedP-8), for utilization by Joint Program Manager, Information Systems (JPM-IS). Select and implement a respiratory tract model and develop a prototype particle size distribution (PSD) health effects model. Investigate a modeling and simulation capability that can be used to design new synergistic combinations of anti-bacterial medications for use against drug-resistant strains. Develop secondary infection models for disease spread based on small-world networks and an extension of the Susceptible Exposed Infectious Removed (SEIR) epidemiological model to account for heterogeneous mixing among sub-populations in order to provide a well-founded model for casualty estimates in JEM involving infectious/contagious diseases, both bioagent-induced and naturally occurring (Predicting Effects Due to Infectious/Contagious Diseases for JEM). Continue building the analytical framework and identify gaps in capability to conduct rapid program analysis and conduct feasibility assessments for tool(s) development. Initiate development of representative prototype models for each of the capability areas. Identify critical enhancements based upon the early prototype of the multivariate decision support tool. Continue development of the JSAF plug-ins and Urban Resolve capability for the urban experimental and evaluation simulation. Transition capability to JEM.	4192	2686	10421	12919

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue research of modeling in the medical area. Complete the implementation of the respiratory tract model and development of the prototype particle size distribution (PSD) health effects model. Continue to investigate a modeling and simulation capability that can be used to design new synergistic combinations of anti-bacterial medications for use against drug-resistant strains. Continue to develop secondary infection models for disease spread based on small-world networks and an extension of the Susceptible-Exposed-Infectious-Removed (SEIR) epidemiological model to account for heterogeneous mixing among sub-populations in order to provide a well-founded model for casualty estimates in JEM involving infectious/contagious diseases, both bioagent-induced and naturally occurring (Predicting Effects Due to Infectious/Contagious Diseases for JEM). Continue building the analytical framework and identifying gaps in capability to conduct rapid program analysis and conduct feasibility assessments for tool(s) development. Continue development of representative prototype models for each of the capability areas. Identify critical enhancements based upon the early prototype of the multivariate decision support tool. Complete development of the JSAF plug-ins and Urban Resolve capability for the urban experimental and evaluation simulation and transition capability to JEM. Initiate filling critical data gaps in the areas of applied science which support the Transformational Countermeasures Technologies Initiative (TCTI) of the CB Defense Program, and develop a web-based system for storage and access of CB M&S and IT development data and knowledge.	4192	2686	10421	12919
Information Systems Technology, Sensor Data Fusion Hazard Prediction with Nowcasting (DTO CB62) -	2100	600	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Enhanced near-surface environmental characterization and demonstrated improvements using the Joint Effects Model (JEM). Published report from study of complex environments and algorithm refinement from previous years efforts. Assessed and selected methods for integrating near real-time weather data into transport and dispersion models. Enhanced interface between JEM and mesoscale models. Demonstrated CB prototype source determination modules. Initiated consolidation of source term determination module development. Developed and tested the Second-order Closure Integrated Puff (SCIPUFF) Adjoint Model using ideal observational data from field trials. Validated initial prototype and completed documentation. Continued development of preferred methods for using specific data from chemical and biological sensors to determine hazard source characteristics. FY 07 - Complete DTO CB62 as technology has been fully developed by other government and private entities. Publish final report and computational implementation of preferred algorithm(s) for source term estimation.	2100	600	0	0
Information Systems Technology, Sensor Data Fusion Hazard Prediction with Nowcasting - FY 07 - Leverage efforts from previous DTO work to initiate selection of most appropriate source term estimation tool(s) and develop Graphical User Interface (GUI) and Application Program Interface (API). Initiate hazard prediction refinement development based on accurate source term characterization and CB data assimilation. Develop a biological background model to reduce sensor false alarms in a realistic biological background. Test sensor placement optimization software suite against existent field data. Initiate indoor sensor data fusion effort. Collect field trial data for Validation and Verification (V&V) of sensor data fusion algorithms. FY 08 - Initiate validation of source term estimation and hazard refinement techniques against new high-resolution field trial data. Complete prototype algorithm for indoor sensor data fusion applications. Continue biological background model development to reduce sensor false alarms - delivery of first generation prototype. Initiate development of a sensor placement tool for optimal hazard prediction. Demonstrate formal adjoint of transport and dispersion model.	0	1800	5671	4980

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Complete biological background model development to reduce sensor false alarms - delivery of first generation prototype. Continue development of a sensor placement tool for optimal hazard prediction. Initiate development of capability to continuously refine and update contamination footprint thru rapid assimilation of limited and disparate information into meteorological and transport and dispersion models.	0	1800	5671	4980
Information Systems Technology, Battle Space Management - FY 06 - Piloted Net-Centric Enterprise Systems (NCES) modules for migration to test environment. Developed an end-to-end laboratory facility to test the requirements for integrating CBRN sensors onto existing and planned Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) networks. Conducted study of user interface requirement for future indications and warning for CBRN hazards in both deployed force and homeland defense scenarios. Developed integration strategy to link consequence management capability into Joint Warning and Reporting Network (JWARN). Initiated development of appropriate bridging capability to extend JWARN capabilities to homeland defense architectures. Initiated development of a modeling/exercise rehearsal capability for JWARN. Field-tested intelligent agent decision. Provided an integrated demonstration and user access for the Shared Common Operating Picture (COP). Conducted live real-time demonstration of JWARN Component Interface Device (JCID) compliant thin server on examples of fielded JWARN sensors. Continued work on web services, NCES and Global Information Grid (GIG) integration for common CBRN software services. Demonstrated inter-LAN socket connection manager in a simulated network environment.	6525	6250	2836	2990

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Build NCES modules for migration to test environment. Complete NCES service pilot. Cross-program reuse pilot in selected JPM-IS programs. Develop the CB-sensor network test facility. Develop certification lab capability for JWARN related sensors and nodes. Initiate test of CBRN interfaces to assess impact on JWARN and other C4ISR entities. Initiate preliminary research on alternative CBRN display technologies. Continue sensor-data fusion and source term location technologies with eventual integration with JEM and Joint Operational Effects Federation (JOEF). Develop the exchange and multi-level fusion of actionable information with real world C2 systems in DOD, Coalition and Homeland Security and Homeland Defense (HLS/HLD) domains. Support JCID development by modifying our existing Extensible Markup Language (XML) thin server for chemical sensors to meet JCID requirements and demonstrate its operation for JWARN. FY 08 - Continue research on alternative CBRN display technologies. Continue sensor-data fusion and source term location technologies with eventual integration with JEM and JOEF. Demonstrate the exchange and multi-level fusion of actionable information with real world C2 systems in DOD, Coalition and HLS/HLD domains. Transition modified XML thin server for chemical sensors to meet JCID requirements to JWARN. Transition the Inter-LAN Socket Connection Manager to JWARN. FY 09 - Develop next generation technologies and net-centric enterprise integration. Integrate Sensor Data Fusion (SDF) technologies into CB network. Initiate development of high speed data acquisition supporting full spectrum decision support for CB. Explore Nanotechnology solutions in support of Information Management Systems and the Transformational Countermeasure Technologies Initiative efforts.	6525	6250	2836	2990
Information Systems Technology, Chemical and Biological Hazard Environment Prediction (DTO CB55) - FY 06 - Completed DTO CB55.	800	0	0	0
Information Systems Technology, Chemical and Biological Hazard Environment Prediction -	5945	4879	2836	1988

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Leveraged efforts from previous DTO work and continued high altitude and intentionally functioning missile intercept effects characterization by understanding and modeling key physics for single drops. Continued littoral and maritime effects research for JEM by improving boundary layer meteorological modeling capabilities. Conducted study of computation modeling for urban flows. Conducted study of Non-Traditional Agent (NTA) transport and dispersion module requirements for JEM. Conducted verification, validation and documentation of the knowledge based approach for intelligent sensor control and networking. Adapted and integrated existing cellular automata models into a Geographic Information System (GIS) tool for hazard assessment. Directed validation of FAST3D-CT model with wind tunnel data.	5945	4879	2836	1988
FY 07 - Complete development of data assimilation techniques to improve forecasts of near-surface characteristics important for hazard prediction. Continue development of models for high altitude, urban, littoral and coastal environments, and indoor scenarios to be used by the JEM. Model key physics for large scale events for the high altitude intercept module. Provide validation procedures for urban contaminant transport models. Initiate validation of wind tunnel and FAST3D-CT with Oklahoma City Scale Model (OKC) field trial data. Publish FY07 validation report. Develop/integrate/test new Cellular Automata CBR specific models. Evaluate mesoscale model forecasts using available observations for improved coastal and urban dispersion predictions.				
FY 08 - Complete development of data assimilation techniques to improve forecasts of near-surface characteristics important for hazard prediction. Complete development of models for high altitude, urban, littoral and coastal environments, and indoor scenarios to be used by the JEM. Model key physics for large scale events for the high altitude intercept module. Provide validation procedures for urban contaminant transport models. Complete validation of wind tunnel and FAST3D-CT with urban field trial data. Publish FY08 validation report. Initiate development of advanced numerical weather prediction parameterizations and ensemble techniques.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Complete development of variable resolution database containing highly refined estimates of "typical" atmospheric conditions for any given location and time. Expand and improve multi-scale four-dimensional data assimilation model. Continue development of waterborne transport model. Initiate optimization of methods to significantly improve performance of transport and dispersion hazard models for JEM.	5945	4879	2836	1988
Information Systems Technology, Chemical and Biological Warfare Effects on Operations - FY 06 - Identified new applications for the Joint Operational Effects Federation (JOEF). Implemented Mission-Oriented Protective Posture (MOPP) capabilities and integrated the biological agent toxicity model into the military worth assessment toolkit. Initiated development of an operational impact assessment tool. Initiated and completed the requirements generation for the linkage of the Simulated Training and Analysis for Fixed Facilities/Sites (STAFFS) and contamination models. Initiated model design and development of Chemical-Improvised Explosive Device (C-IED) effects model. Conducted a side-by-side comparison of mobile force models for inclusion in JOEF. Improved CBR operational effects modeling tools and methods by working with various agencies/labs to identify capabilities and areas for follow-on research/development. Initiated development activities for the integration of JOEF components with theater-level models such as the Joint Integrated Contingency Model (JICM). Continued design methods for new operational and threat domains; implemented conventional, radiological methodologies, developed data collection plan for supporting database for Next Generation Model of CB Effects on Military Operations. Modeled two mission examples (e.g. Aerial Port of Debarkation and Sea Port of Debarkation), and developed initial Rapid Mission Impact Assessment Tool based on example missions. Conducted a Web-services and data model study and initial implementation of IMPACT framework.	9046	9433	3781	3986

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Integrate mobile forces modules. Continue developing integration with theater-level models and begin initial testing with Joint Forces Command (JFCOM) and other selected Combatant Commands (COCOMs). Build plan for developing a complete virtual environment training capability. Demonstrate proof-of-concept for the Chemical-Improvised Explosive Device (C-IED) model. Demonstrate applicability of the automated CBRN data import/export tool. Implement new operational models. Develop methods for human-in-the-loop and automated analysis capability. Conduct a prototype development and proof-of-concept demonstration for the improved CBRN situational awareness methodology. Enhance software and conduct additional tests on the rapid mission impact assessment tool. Complete the STAFFS and contamination model linkages. Test and verify software upgrades. Implement new operational models; operational tests and exercise participation, and develop methods for human-in-the-loop and automated analysis for Next Generation Model of CB Effects on Military Operations. Enhance Rapid Mission Impact Assessment Tool and test on additional missions. Implement aggregation methodology for CBRN in Tactical and Theatre Level Simulation Model and begin linking to tactical model. Implement web-services interface and data model for IMPACT framework. Determine preliminary applications in military exercises for Decision Support for Logistics Response to CBR Attacks model. FY 08 - Implement new models for Next Generation Model of CB Effects on Military Operations. Complete link with tactical model of CBRN in Tactical and Theatre Level Simulation Model and begin link with theatre model. Provide architectural enhancements and implementation of initial linkages for IMPACT framework. Refine design and expand methodology development for improving CBRN situational awareness. Perform integrated software/system tests on Decision Support for Logistics Response to CBR Attacks model. FY 09 - Demonstrate IMPACT Framework linkage methodology and architectural enhancements. Develop documentation for Methodology for Improving CBRN Situational Awareness. Transition Decision Support for Logistics Response to CBR Attacks to Global Command and Control System and Global Combatant Support System (GCCS/GCSS).	9046	9433	3781	3986
Total	**28608**	**25648**	**25545**	**26863**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

	FY 2006	FY 2007	FY 2008	FY 2009
Decontamination	7023	6836	7309	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Decontamination, Solution Chemistry - FY 06 - Concluded development of a chlorine dioxide based man-portable decontamination system and investigated alternative solution based technologies for developing chlorine dioxide to support the Joint Portable Decontamination System (JPDS); continued efforts to develop reactive impregnated peracetate solvent-based wiping system capable of decontaminating vehicle interiors and sensitive equipment to support Joint Service Sensitive Equipment Decontamination (JSSED) and Joint Platform Interior Decontamination (JPID). FY 07 - Complete chamber testing on chlorine dioxide-based candidates and transition to JPDS. Initiate research on technologies to develop hydrogen peroxide at their point-of-use. FY 08 - Complete research and publish findings on technologies to develop hydrogen peroxide at their point-of-use.	3033	1685	2500	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Decontamination, Solid Phase - FY 06 - Continued development of porous polymer solvent cartridges for removing CW agents from fluorinated solvent used in sensitive equipment decontamination as a JSSED incremental improvement. FY 07 - Complete development of an improved filtration system for hydrofluoro ethers solvent cleaning systems and transition to the JSSED program as a product improvement. Initiate new research to develop reactive sorbent nano-active suspensions and sprayable powders for Joint Service Transportable Deconcontamination System (JSTDS) - Small Scale (SS) including modifications of the technologies for decontamination in extreme weather conditions. FY 08 - Complete efforts to develop reactive sorbent nano-active suspensions and sprayable powders for JSTDS and consolidate efforts under Protection capability area in FY 2009.	696	1326	1250	0
Decontamination, Alternative Process - FY 06 - Initiated research to determine and develop efficacy of a gaseous chemical and biological decontamination system combining hot air and modified vaporous hydrogen peroxide. Transitioned efficacy findings to BA3 to support the JPID, JSTDS and JSSED programs. Initiated new studies to determine technical potential of reactive coatings. FY 07 - Complete research on gaseous decontamination system modifications for decontamination in extreme weather conditions. Initiate research to demonstrate alternative decontamination processes using gas, kinetic, energetic, and/or novel approaches to support the Transformational Countermeasures Technologies Initiative (TCTI) approach. FY 08 - Continue to investigate novel approaches to develop new decontamination processes based on the TCTI approach and consolidate effort under Protection capability area in FY 2009.	2179	1919	2349	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Decontamination, Process Fundamentals - FY 06 - Initiated research efforts to develop an aerosol-based decontamination application and determined the efficacy effects using aerosolized activated hydrogen peroxide. Continued research into methodology for the metal catalyzed alcoholysis of neutral organophosphates and organophosphates, including chemical G- and V-agents under neutral conditions and ambient temperature. FY 07 - Complete research into methodology for the metal catalyzed alcoholysis of neutral organophosphates and organophosphates, including chemical G- and V-agents under neutral conditions and ambient temperature. Continue research efforts to develop an aerosol-based decontamination application and determine the efficacy effects using aerosolized activated hydrogen peroxide. Continue development of a decontamination assurance spray that was initiated as part of Small Business Innovative Research (SBIR), and initiate research to determine the effect of droplet sized decontaminant on the efficacy of aerosolized peroxy-based decontaminants. FY 08 - Complete research efforts to develop an aerosol-based decontamination application and determine the efficacy effects using aerosolized activated hydrogen peroxide. Complete research to determine the effect of droplet sized decontaminant on the efficacy of aerosolized peroxy-based decontaminants.	1115	1906	1210	0
Total	**7023**	**6836**	**7309**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Detection	19588	22134	34118	34299

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Point Detection, Integrated CB -	4075	5864	6000	7299
FY 06 - Continued feasibility assessment of first generation breadboard based on millimeter wave spectroscopy for bio detection. Continued Raman spectroscopy for the detection/identification of biological materials. Initiated investigations in solid state visible and UV receivers to replace photomultiplier tube for improved size, weight, power, reliability, and cost. Initiated microelectronic machine sized solid state Fourier Transform Infrared (FTIR) point sensor system.				
FY 07 - Continue feasibility assessment of first generation breadboard based on millimeter wave spectroscopy for biological detection. Complete Raman spectroscopy for the detection/identification of biological materials. Complete investigations in solid state visible and UV receivers to replace photomultiplier tube for improved size, weight, power, reliability, and cost. Continue microelectronic machine sized solid state FTIR point sensor system. Initiate feasibility studies on assays for biological materials based on multiphoton, multi-wavelength processes. Initiate development of novel use of laser technology to separate biological materials for enhanced detection of biological warfare agents in water. Initiate development of novel laser sources and evaluation of discrimination capability and optical design aspects for BW aerosol detection with these sources. Initiate feasibility studies on the use of novel nanowire-array sensors for enhanced sensitivity and selectivity in the detection of biological warfare materials.				
FY 08 - Complete feasibility assessment of first generation breadboard based on millimeter wave spectroscopy for biological detection. Complete microelectronic machine sized solid state FTIR point sensor system. Continue feasibility studies on assays for biological materials based on multiphoton, multi-wavelength processes. Continue development of novel use of laser technology to separate biological materials for enhanced detection of biological warfare agents in water. Continue development of novel laser sources and evaluation of discrimination capability and optical design aspects for BW aerosol detection with these sources. Continue feasibility studies on the use of novel nanowire-array sensors for enhanced sensitivity and selectivity in the detection of biological warfare materials. Initiate feasibility study into nanoscale detection systems to meet the Transformational Countermeasures Technology Initiative (TCTI).				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Complete feasibility studies on assays for biological materials based on multiphoton, multi-wavelength processes. Complete development of novel use of laser technology to separate biological materials for enhanced detection of biological warfare agents in water. Complete development of novel laser sources and evaluation of discrimination capability and optical design aspects for BW aerosol detection with these sources. Complete feasibility studies on the use of novel nanowire-array sensors for enhanced sensitivity and selectivity in the detection of biological warfare materials. Continue feasibility study into nanoscale detection systems to meet the TCTI.	4075	5864	6000	7299
Detection, Biological and Chemical Stand-off Technology - FY 06 - Initiated the development of models to predict passive standoff technology responses to aerosols. Initiated detection modalities to detect sentinel species from biological chemical warfare materials and processes. Initiated studies to investigate the optimal performance parameters for hyperspectral technology to detect biological materials. FY 07 - Continue the development of models to predict passive standoff technology responses to aerosols. Continue the study on the detection modalities to detect sentinel species from biological chemical warfare materials and processes. Continue the studies to investigate the optimal performance parameters for hyperspectral technology to detect biological materials. Continue studies to optimize/convert detection algorithms to imaging technology. Initiate validation and modeling studies to increase the level of discrimination of biological materials in the IR electromagnetic spectral regions based upon DISC/DIAL and polarization spectra techniques.	2883	3270	5000	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Complete models to predict passive standoff technology responses to aerosols. Continue the study on the detection modalities to detect sentinel species from biological chemical warfare materials and processes. Complete studies to investigate the optimal performance parameters for hyperspectral technology to detect biological materials. Complete studies to optimize/convert detection algorithms to imaging technology. Complete and transition validation and modeling studies on the level of discrimination of biological materials in the IR electromagnetic spectral regions based upon adsorption, scattering, and polarization spectra techniques to the Joint Biological Standoff Detection System (JBSDS) Increment 2.	2883	3270	5000	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Detection of CB Contamination on Surfaces -	1900	4000	6000	7000
FY 06 - Initiated the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application; focused primarily on chemicals at a sensitivity of 10 mg/m2 level of contamination. Initiated efforts on off-gassing techniques for increased sensitivity of current Raman based Laser Interrogation of Surface for Agents (LISA) system.				
FY 07 - Continue the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application. Initiate feasibility studies on post-decontamination verification using standoff detection methodology other than Raman based LISA.				
FY 08 - Continue the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application. Complete efforts using off-gassing techniques and Raman based LISA. Complete feasibility studies on post-decontamination verification using standoff detection methodology.				
FY 09 - Continue the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application. Evaluate and assess technology for down-selection from non-Raman optical standoff techniques vs. Raman based LISA vs off-gassing techniques for brassboard design.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Point Detection, Biological Identification - FY 06 - Leveraged efforts from medical science and technology programs in proteomics for biomarkers for the identification of biological agents in complex biological backgrounds. FY 07 - Initiate development of portable technology to completely sequence entire pathogen genomes based upon the sequencing thru synthesis concept. This technology is being leveraged from National Institute of Health efforts to reduce cost at their genomic centers. FY 08 - Continue development of portable technology to completely sequence entire pathogen genomes based upon the sequencing thru synthesis concept. Complete breadboard design and initiate build of prototype system and transition to BA3. FY 09 - Complete development and demonstrate portable technology to completely sequence entire pathogen genomes.	2030	4000	10000	10000
Detection, Wide-Area Aerial Reconnaissance for Chemical Agents (DTO CB53) - FY 06 - Determined optimum spectrometer performance specifications in terms of scan speed, spatial resolution, and spectral resolution. Demonstrated an enhanced FTIR and tunable IR systems with real-time data processing on an airborne platform in a reconnaissance application using the appropriate performance parameters. Completed DTO. This DTO supported the Joint Nuclear Biological Chemical Reconnaissance System (JNBCRS) program.	4000	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Point Detection, Chemical - FY 07 - Initiate transition of technology from Defense Advanced Research Projects Agency (DARPA) on the development of a micro gas analyzer (MGA) based on MEMS technology. Focus is on real-time (less than 5 sec) detection/identification of sub miosis sensitivity levels (parts per trillion) and the expansion of the number of detectable materials to include the high priority Toxic Industrial Chemicals (TICs). FY 08 - Complete transition of MGA technology from DARPA. Initiate development of MGA technology as the replacement technology for the Joint Chemical Agent Detector or for integration into other Major Defense Acquisition platforms requiring chemical warfare agent detection. FY 09 - Continue development of MGA technology as the replacement technology for the Joint Chemical Agent Detector or for integration into other Major Defense Acquisition platforms requiring chemical warfare agent detection.	0	5000	7118	10000
Stand-off Biological Aerosol Detection (DTO CB35) - FY 06 - Demonstrated the optimized system performance to detect and discriminate biological agents with at least a sensitivity of 1,000 agent containing particles per liter of air (ACPLA) at a range of 1 km with an objective false alarm rate no more than one per week in both daytime and nighttime operations. Evaluated the feasibility of the demonstrated technology to also meet the chemical stand-off detection requirements. Completed DTO in FY06 and effort supports the Joint Biological Stand-off Detection Systems (JBSDS).	4700	0	0	0
Total	**19588**	**22134**	**34118**	**34299**

	FY 2006	FY 2007	FY 2008	FY 2009
Protection	10391	11337	22962	28401

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Protection, Percutaneous Protection, Reduced Physiological Burden - FY 06 - Completed development of the Pulsed Microclimate Cooling System (PMCS) that demonstrated a 40 percent energy savings thru human physiological testing and transitioned results to Army Technology Objective (ATO[R] NSC-03) Soldier Borne Microclimate Cooling Technologies and other programs for further development. Demonstrated selective and responsive nanopore-filled membranes synthesis concept, and encapsulated nanofiber mesh membranes fabrication. Measured permeability response of concept membranes as a function of electrical stimuli. Synthesized polymers and blends for application in elastomeric permselective membranes, evaluated water vapor and stimulant permeation, and modeled polymer molecular dynamics. Resulting technologies support the Ground Soldier System for Future Combat System. FY 07 - Initiate work to develop a processable interpenetrating polymer network comprising of a soft breathable passive network interspersed with a conducting polymer network whose permeability properties can be electrically controlled. Develop elastic, conformable CB protective fabrics with selectively permeable properties for advanced warfighting ensembles. Optimize polymers and blends for application in elastomeric permselective membranes, characterize their permeation characteristics, and evaluate their physical properties. Produce fabric laminates for laboratory evaluation. Technologies support future protective ensembles. Restructure efforts for enhanced protection into the development of an integrated CB protective fabric that incorporates elements of previous efforts on enhanced percutaneous protection (aerosol Non-Traditional Agents (NTA), biological agents, liquid NTAs, and Toxic Industrial Chemicals(TICs)) and self-detoxifying materials into a single integrated effort. For FY 2008, this effort will be titled "Individual Protection, Integrated Protective Fabric" and combines Integrated Protective Fabrics Enhanced Protection and Reduced Burden.	1010	900	0	0
Individual Protection, Percutaneous Protection, Enhanced Protection (Aerosol NTAs and Bio) -	1505	1100	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Down-selected aerosol barrier materials and closure concepts, incorporated both into an initial prototype garment, and evaluated. Optimized materials, closures, and suit design based on results of the evaluation. Characterized Individual Protection Equipment (IPE) materials filter efficiency for particle sizes and wind speeds, assessed effect of material geometry on filter efficiency, and correlated challenge deposition in IPE systems with swatch, component tests at elevated wind speeds. Developed lab-scale non-woven polymer membrane samples and evaluated to assess particle removal efficiency and air permeability. Resulting technologies/knowledge transitioned to an integrated fabric development project in support the Ground Soldier System for Future Combat System. Transitioned elevated wind speed agent effects characterization to standard methodology development efforts that will support test range capability development. FY 07 - Produce and evaluate an optimized second-generation prototype garment employing both aerosol barrier materials and advanced closures. Develop one square meter non-woven polymer membranes material, incorporate into a prototype fabric system and assess performance. Restructure efforts for enhanced protection into the development of an integrated CB protective fabric that incorporates elements of previous efforts on enhanced percutaneous protection (aerosol NTA, biological agents, liquid NTAs, and TICs) and self-detoxifying materials into a single integrated effort. For FY 2008, this effort will be titled "Individual Protection, Integrated Protective Fabric" and combines Integrated Protective Fabrics Enhanced Protection and Reduced Burden.	1505	1100	0	0
Individual Protection, Percutaneous Protection, Enhanced Protection (Liquid NTAs and TICs) - FY 06 - Identified candidate fibers as support structures for sorbents and reactives and initiated laboratory evaluation of prototype fabrics to assess physical and permeation characteristics. Conducted market research to identify innovative materials applicable to protective boots and gloves, and identified candidates for further consideration. Resulting technologies/knowledge transitioned to an integrated fabric development project in support the Ground Soldier System for Future Combat System, and Joint Chemical Ensemble (JCE).	379	1250	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Based on FY06 evaluations, optimize novel fiber/fabrics and conduct fabric characterization and simulant permeation testing. Conduct preliminary physical and chemical testing of candidate materials for glove and boot applications. Restructure efforts for enhanced protection into the development of an integrated CB protective fabric that incorporates elements of previous efforts on enhanced percutaneous protection (aerosol NTA, biological agents, liquid NTAs, and TICs) and self-detoxifying materials into a single integrated effort. For FY 08, this effort will be titled "Individual Protection, Integrated Protective Fabric" and combines Integrated Protective Fabrics Enhanced Protection and Reduced Burden.	379	1250	0	0
Individual Protection, Integrated Protective Fabric - FY 08 - Complete work on identifying and assessing nanocatalytic and nano-particle reactive materials with detoxifying and anti-microbial properties and down-selecting candidate materials. Continue development of test methodologies. Continue the development of elastic, conformable CB protective fabrics with selectively permeable properties. Continue development of processable interpenetrating polymer networks whose permeability properties can be electrically controlled. Initiate work on fabric residual life indicators. Initiate selection and development of novel sorbents leap-ahead improvements over activated carbon technologies. Initiate development and selection of ultralight and tactile barrier materials for gloves and boots. Continue fabrication and testing of prototype integrated fabrics to determine protection, mechanical properties, and heat transfer characteristics. Continue use of computational methods for assessment and refinement of prototypes. Initiate ensemble design conceptual work based on lessons gathered in the human performance project. Resulting technologies/knowledge will transition to an integrated fabric development project in support of the Ground Soldier System for Future Combat System, and JCE.	0	0	5800	5800

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Complete development of test methodologies. Continue the development of elastic, conformable CB protective fabrics with selectively permeable properties. Continue development of processable interpenetrating polymer networks whose permeability properties can be electrically controlled. Continue work on fabric residual life indicators that can be automatically integrated. Continue development of novel sorbents leap-ahead improvements over activated carbon technologies. Complete development work on ultra light and tactile barrier materials for gloves and boots. Continue fabrication and testing of prototype integrated fabrics to determine protection, mechanical properties, and heat transfer characteristics. Continue use of computational methods for assessment and refinement of prototypes. Continue ensemble design conceptual work based on lessons gathered in the human performance project. Initiate fabrication of prototype ensembles for evaluation and demonstration. Resulting technologies/knowledge will transition to an integrated fabric development project in support of the Ground Soldier System for Future Combat System, and JCE.	0	0	5800	5800
Individual Protection, Human Performance - FY 08 - Continue the comprehensive study to reduce physiological burden on the human performance parameters for various warfighter subgroups in the performance of their mission when CB protective systems are employed. Identify trade space between physiological and psychological comfort with regards to warfighter effectiveness. Initiate work to develop an overall comfort and performance model for CB protective equipment. Continue human subject studies on effects of breathing resistance at high work rates. Develop a human response model for breathing rates and assistance. FY 09 - Complete the comprehensive study to reduce physiological burden on the human performance parameters for various warfighter subgroups in the performance of their mission when CB protective systems are employed. Publish findings on trade space between physiological and psychological comfort with regards to warfighter effectiveness. Continue work to develop an overall comfort and performance model for CB protective equipment. Complete human subject studies on the effects of breathing resistance at high work rates. Develop a draft standard for Air Purifying Respirator (APR) qualification. Transition results into the comfort and performance model.	0	0	2902	2851
Individual Protection, Self-Decontaminating Processes -	0	0	0	6360

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue efforts from FY 08 Decontamination Alternative Processes and Solid Phase to develop self decontaminating processes using the Transformational Countermeasure Technologies Initiative (TCTI) approach.	0	0	0	6360
Respiratory Protection, Enhanced CBRN/NTA/TIC Protection - FY 06 - Completed a trade-off analysis and initiated fabrication of advanced mask concept prototype models. Down-selected the most promising technologies for protection enhancement. This included intelligent seals, micro-thermoelectric system for cooling, and active air management systems for comfort and protection. Conducted research on a dual-cavity sealing system for insertion into the selected mask platform. The trade-off analysis resulted in two new start efforts in FY 07 for Individual Protection: Respiratory/Ocular Protection and Air Purification. FY 07 - Initiate Individual Protection, Respiratory/Ocular Protection projects. Initiate the investigation of intelligent seal enhancement materials and technologies that will provide improvements in the field protection factor performance and comfort of a respirator. Define the key development parameters associated with respiratory protective systems and analyze advanced concept options based on these parameters by establishing geometric relationships with operational performance. Continue to develop a dual-cavity respirator with increased levels of respiratory protection that provide a real-time indication of mask fit. Initiate project to develop the next generation filter for individual protection with objective of decreasing weight and breathing resistance, reducing the profile, and increasing protection against TICs. Continue to develop metal-organic frameworks as turnable sorbents for advance air purification technologies in protective masks. Initiate development of a process to grow alumina nanofiber on a silica matrix to optimize size and density of nanofibers.	1710	1826	6710	5850

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Initiate the integration of the protective mask designs with developmental helmet systems to provide seamless compatibility of CB protection with ballistic protection and integration of communication and optical systems. Continue the investigation of intelligent seal enhancement materials and technologies that will provide improvements in the field protection factor performance and comfort of a respirator. Continue to define the key development parameters associated with respiratory protective systems and incorporate data and lessons from the human performance project. Continue to develop a dual-cavity respirator with increased levels of respiratory protection that provide a real-time indication of mask fit. Continue project to develop the next generation filter for individual protection. Continue to develop metal-organic frameworks as turnable sorbents for advanced air purification technologies in protective masks. Initiate the development of nanofiber-based filters with high efficiency, reduced pressure drop and reduction in weight and cube. Continue development of a process to grow alumina nanofiber on a silica matrix to optimize size and density of nanofibers. Initiate effort to develop a sorptive and reactive capacity residual life indicator for mask filters. Initiate reactive hybrid approaches for individual protection filtration.	1710	1826	6710	5850
FY 09 - Complete integration of the protective mask designs with developmental helmet systems to provide seamless compatibility of CB protection with ballistic protection and integration of communication and optical systems. Complete the investigation of intelligent seal enhancement materials and technologies that will provide improvements in the field protection factor performance and comfort of a respirator. Continue to define the key development parameters associated with respiratory protective systems and incorporate data and lessons from the human performance project. Complete work on the dual-cavity respirator with increased levels of respiratory protection that provide a real-time indication of mask fit and integrate concept into the final design. Continue project to develop the next generation filter for individual protection. Complete development of metal-organic frameworks as turnable sorbents for advance air purification technologies in protective masks. Complete the down-selection of ceramic and polymer nanofiber-based filters. Continue reactive hybrid approaches for individual protection filtration. Develop and fabricate initial prototypes and evaluate performance.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Protection, Advanced Air Purification System Model (DTO CB61) - FY 06 - Configured laboratory-scale systems, defined test and evaluation methodology, and measured the required design and system integration data (characterize unit processes). Determined parameters for an Advanced Air Purification System Model. FY 07 - Develop several potential system configuration designs. Complete work on a trade study tool for the optimization, sensitivity analysis, and assessment of Advanced Air Purification (AAP) systems. Define standard AAP test methods and procedures. Support AAP demonstration programs (design review, requirements review, test plan) and incorporate demonstration data into AAP database. Optimize the demonstration to best meet the intended application's requirements. Close a critical data gap by linking full scale simulant results to lab scale simulant and agent results. Characterize chemical performance of the demonstrator at untested conditions. Characterize scaling properties and integration sensitivities of demonstrator. Verify agent performance at full scale and provide data to AAP model required to estimate agent performance. Complete DTO and transition the Air Purification Evaluation Tool to Overarching Collective Protection (COLPRO) Model.	700	500	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Protection, Improved Single-Pass Filters - FY 06 - Continued work to identify broad spectrum sorbents for application in both single pass and regenerative filtration systems for removal of Toxic Industrial Chemicals (TIC) and other problematic chemicals. Developed chemical probes, hardware and methodology to assess residual life indicator COLPRO chemical filters. Assessed and reported the impact of particle size distribution and long-term loading by measuring efficiency changes on aerosol/particulate flat sheet High Efficiency Particulate Arrestance (HEPA) media and full size HEPA filters. FY 07 - Investigate adding ethylene oxide, nitrogen dioxide and carbon monoxide functionalities to CP filters. Transition results of investigations on polishing sorbent technology Pressure Swing Adsorption (PSA), Temperature Swing Adsorption (TSA) and Pressure/Temperature Swing Adsorption (P/TSA) to JPM ColPro. Complete sorbent work on enhanced performance of single-pass filters and regenerative systems and transition data to DTO CB61. Resulting technologies/knowledge transitioned to an integrated fabric development project in support the Ground Soldier System for Future Combat System. Initiate the development of a highly efficient particulate filter that uses charged sub-micron water droplets and transition effort to Novel Air Purification Technologies.	1042	900	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Protection, Novel Air Purification Technologies - FY 08 - Initiate a project to develop energetic, reactive, media-less, and 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 recirculation air in buildings, shelters or platforms. Initiate development of an acoustic fractionator that removes particulates down to the submicron level using standing sound waves. Initiate development of a hybrid plasma filter that provides both vapor particulate removal and destruction capabilities. Initiate development of a new air purification technology based on selective ionization and contaminant extraction. Initiate development of a novel, low pressure drop, High Efficiency Particulate Arrestance (HEPA) filter, which provides increased dust capacity and extended filter life thru the use of irregularly shaped high surface area submicron fibers. Continue development of a highly efficient particulate filter that uses charged sub-micron water droplets from efforts under Improved Single-Pass Filters. FY 09 - Continue to develop energetic, reactive, media-less, and air purification technologies that reduce size, weight, and lifecycle costs of removing Chemical and Biological agents and TICs from both make-up and recirculation air in buildings, shelters, or platforms. Continue development of an acoustic fractionator that removes particulates down to the submicron level using standing sound waves. Continue development of a hybrid plasma filter that provides both vapor particulate removal and destruction capabilities. Continue development of a new air purification technology based on selective ionization and contaminant extraction. Continue development of a novel, low pressure drop, HEPA filter, which provides increased dust capacity and extended filter life thru the use of irregularly shaped high surface area submicron fibers. Complete demonstration of a highly efficient media less particulate filter that uses charged sub-micron water droplets. Down-select among technological approaches.	0	0	3900	3900

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Protection, Regenerative and Reactive Air Purification - FY 06 - Performed lab-scale studies of two and four bed Temperature, Pressure, and Electrical Swing Adsorption (ESA) regenerative air purification systems. Initiated new evaluations of three competing Electrical Swing Adsorption technologies by constructing equivalent test stands. Applied temperature and pressure regenerative system technology from this effort to DTO CB61. Initiated new development of reactive air purification technologies. FY 07 - Optimize Temperature Swing Adsorption (TSA) and ESA operating parameters, adsorber design and test. Demonstrate air purification system based on selective ionization and contaminant extraction technology. Continue development of Reactive Air Purification technologies and transition to COLPRO System Integration in FY 2008.	1385	1926	0	0
Protection, Shelter Systems and Contamination Control Area (CCA)/Airlock/Toxic Free Area (TFA) (CCA/A/TFA) - FY 06 - Completed study that advanced and integrated collective protection shelter system technologies for airlocks, CB closures, CB barriers (impermeable and permeable reactive) and seaming. Convened working group to analyze threat, systems and current protocol; performed initial Computational Fluid Dynamics (CFD) airflow analysis, testing and generated interim report detailing CCA/A/TFA processing. FY 07 - Identify novel technologies for application in the CCA/A/TFA and develop initial CATFA processing system design and transition to COLPRO System Integration in FY 2008.	1375	1770	0	0
Protection, Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating - FY 06 - Continued development of CB barrier material for CB shelters. Continued the development of expedient protective coatings, determined material interactions and permeability and performed conceptual soft shelter testing. Developed a family of coatings that form a gas impermeable film for expedient encapsulation and CB hardening of existing structures. Initiated new development of microcrystalline and nanocrystalline cellulose materials for use with reactive chemistries.	1285	1165	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Perform laboratory demonstration of coatings that will form a gas impermeable film for expedient encapsulation and CB hardening of existing structures. Perform vapor challenge with integrated shelter system components. Perform casting of barrier films upon hard & soft substrates and perform simulant permeability testing of microcrystalline and nanocrystalline cellulose barrier films and transition to COLPRO System Integration in FY 08.	1285	1165	0	0
Protection, COLPRO System Integration - FY 08 - This effort transitions technologies from previous efforts of Regenerative and Reactive Air Purification, Shelter Systems and Contamination Control Area (CCA)/Airlock/Toxic Free Area, and Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating. Continue project to investigate alternate system solutions for Collective Protection (COLPRO). Expand study of system and alternatives and initiate efforts addressing specific technological gaps to facility development. Technologies may include, but will not be limited to, micro fine detoxifying aerosol fogs to facility entry and mitigate internal releases, internal self-detoxifying surfaces for walls and ductwork, expedient retrofit kits, self-detoxifying and expedient strippable coatings, rapid isolation and purge schemes, and novel an innovative air flow and recirculation schemes. FY 09 - Continue project to investigate alternate system solutions for COLPRO. Expand study of system alternatives and initiate efforts addressing specific technological gaps to facility development. Technologies may include, but will not be limited to, micro fine detoxifying aerosol fogs to facility entry and mitigate internal releases, 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 recirculation schemes.	0	0	3650	3640
Total	**10391**	**11337**	**22962**	**28401**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

	FY 2006	FY 2007	FY 2008	FY 2009
Threat Agent Sciences	29460	35751	24810	24307

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Threat Agent Sciences, Agent Characterization and Simulant Development - FY 06 - Continued research into Non Traditional Agents (NTA) chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants. Initiated simulant and methodology development projects to address requirements in programs of record, as aligned by the CBDP Test and Evaluation (T&E) community. FY 07 - Continue research into NTA chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants. Continue simulant and methodology development projects to address requirements in programs of record, as aligned by the T&E community. Initiate simulant correlation studies to define operational envelopes in which simulants may be used for Developmental Tests and Operation Tests (DT/OT). FY 08 - Continue research into NTA chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants. Continue simulant and methodology development projects to address requirements in programs of record, as aligned by the T&E community. Continue simulant correlation studies to define operational envelopes in which simulants may be used for DT/OT.	3718	4575	5937	5844

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue research into NTA chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants. Incorporate newly prioritized agents as identified by intelligence community and operational users. Continue simulant and methodology development projects to address requirements in programs of record, as aligned by the T&E community. Continue simulant correlation studies to define operational envelopes in which simulants may be used for DT/OT. Transition capabilities from Computation Chemistry programs to provide simulant design and selection methodologies for use in Operational Test and Evaluation.	3718	4575	5937	5844
Threat Agent Sciences, Agent Fate Biological Toxin Fate in Water Matrices - FY 06 - Completed the measurement of persistence (viability) of biological warfare agents released into operational environments.	664	0	0	0
Threat Agent Sciences, Low Level Toxicology, Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) - FY 06 - Conducted validation studies for predictive models that refine and extend the ability to extrapolate to human operational health risk from exposure to nerve agents. Completed GF exposure studies and extended time course and dose-response studies for VX non-threshold effects relevant to military response settings. Initiated studies for nerve agent GD that lead to a refined operational human health risk assessment. Continued and expanded evaluations of inhalation toxicology for traditional agents to deliver science-based exposure standards for operational risk management decision tools. FY 07 - Complete extended inhalation studies that define extended time, low-level exposures to nerve agents GF and VX. Deliver scientifically-based acute exposure standards to the traditional chemical warfare agents for integration into operational risk management tools. Deliver refined human health risk assessment for HD inhalation exposures suitable for incorporation into Operational Risk Management processes.	6337	5525	0	0
Threat Agent Sciences, Low Level Toxicology - Methodology Development -	0	1334	998	956

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07/08/09 - Initiate and complete development of technically demanding exposure and analytic methods for selected very low volatile chemical threat agents, such as non-traditional agents (NTAs) in support of DTO CB51 and DTO CB69.	0	1334	998	956
Threat Agent Sciences, Operational Toxicology - Chemical Warfare Agent Operational Exposure Hazard Assessment Research, NTA and Contact Toxicity (DTO CB69) - FY 07/08/09 - Initiate and complete research to establish the operational risk standards for military personnel potentially exposed to non-traditional chemical warfare agents as well as selected traditional threat agents. Using foundation studies initiated under Low Level Toxicology, expand and target studies that will directly lead to a human health risk assessment exposure standard for medical applications. For non-medical applications, studies will support efforts to establish detection and decontamination limits for technology development. Complete DTO CB69.	0	7060	5322	5057
Threat Agent Sciences, Operational Toxicology - Toxicokinetic and Toxicodynamic Modeling of Biological Agents - FY 06/07/08/09 - Initiate and continue development of empirically based, mathematical models to characterize population dynamics of bacterial germination and migration within the body (toxicokinetics), and address infection of target tissue under natural and altered physiological states (toxicodynamics).	400	667	333	478
Threat Agent Sciences, Agent Fate - Environmental Fate of Agents (DTO CB42) - FY 06 - Completed predictive modeling, methodology development, fundamental laboratory measurements and outdoor live agent testing of HD mustard gas and VX and GD nerve agents on operationally relevant surfaces. Used data to develop models and transitioned models to the Joint Effects Model (JEM).	5180	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Threat Agent Sciences, Agent Fate - Lab/Large-Scale Wind Tunnel Studies - FY 06 - Completed surface evaporation tests of HD on operationally relevant surfaces in lab-scale and outdoor tests for model validation in support of DTO CB42. FY 07 - Initiate studies of thickened Chemical Warfare Agents (CWAs). Refine protocols for laboratory wind tunnels and collect data on thickened CWAs evaporation. FY 08 - Implement protocols for laboratory wind tunnels and collect additional data on thickened CWAs evaporation. FY 09 - Using protocols previously developed for laboratory wind tunnels, complete data collection for evaporation studies on thickened CWAs or substrates specified by Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense (JRO-CBRND) and material developments under Transformational Countermeasures Technologies Initiative (TCTI). Initiate data collection characterizing traditional agent evaporation under conditions demonstrating newly discovered phenomena.	2253	3307	2098	2047

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Threat Agent Sciences, Agent Fate - Fundamental Laboratory Measurements - FY 06 - Completed laboratory surface evaporation tests of VX nerve agent, limited tests of GD nerve agent and HD mustard gas on operationally relevant surfaces in support of DTO CB42. FY 07 - Initiate kinetic studies of the fate of thickened CWAs on operationally relevant surfaces. FY 08 - Continue kinetic studies of the fate of thickened CWAs on operationally relevant surfaces to investigate newly identified phenomena. FY 09 - Continue kinetic studies of the fate of thickened CWAs on operationally relevant surfaces to investigate newly identified phenomena. Integrate characterization of new phenomena into models to be transitioned to the JEM.	5623	1333	839	819
Threat Agent Sciences, Agent Fate - Methodology Development - FY 06 - Completed and published reaction chemistry of HD mustard gas, and VX, and GD nerve agents on concrete, asphalt and sand in support of DTO CB42.	2161	0	0	0
Threat Agent Sciences, Agent Fate - Predictive Modeling - FY 06 - Completed HD mustard gas and VX nerve agents evaporation models from lab-scale wind tunnel data and initiated validation of model predictions in limited field trials in support of DTO CB42. Completed development of the liquid contact model and initiated validation of the model against experimental data. FY 07 - Develop evaporation models of thickened CWA using data from lab-scale wind tunnel data and field trials. Transition data to the JEM. FY 08/09 - Complete the development of evaporation models of thickened CWAs on operationally relevant materials based data from lab-scale wind tunnel data and field trials. Continue the transition of data to the JEM.	967	2400	1511	1474
Threat Agent Sciences, Agent Fate - Environmental Fate of Non-traditional Agents (DTO CB68) -	0	3500	2203	2150

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Initiate research to develop data sets of persistence and residual NTA concentration on operationally relevant surfaces (concrete, asphalt, painted surfaces, sand, soil, etc.) as specified by the JRO-CBRND. Characterize reactivity of the NTAs with surfaces, as well as surface penetration and the fate of NTAs over time. Methodology development is a primary thrust of this first year of the DTO. FY 08 - Continue research to develop data sets of persistence and residual NTA concentration on operationally relevant surfaces (concrete, asphalt, painted surfaces, sand, soil, etc.) as specified by the Joint Requirements Office. Characterize reactivity of the NTAs with surfaces, as well as surface penetration and the fate of NTAs over time. FY 09 - Continue research to develop data sets of persistence and residual NTA concentration on operationally relevant surfaces (concrete, asphalt, painted surfaces, sand, soil, etc.) as specified by the Joint Requirements Office, expand studies to include newly prioritized agents. Characterize reactivity of the NTAs with surfaces, as well as surface penetration and the fate of NTAs over time. Complete DTO and integrate with Transformational Countermeasures Technologies Initiative (TCTI) efforts.	0	3500	2203	2150
Threat Agent Sciences, Computational Chemistry - Quantitative Structure Activity Relationship (QSAR) - FY 06 - Completed independent assessment and evaluation of the QSAR field. Computational Chemistry - Identified, developed, integrated and validated a computational capability for in silico Predictive Modeling Tools to select a new suite of suitable CWA simulants for Operational Test and Evaluation. Developed a data mining tool to provide Indications and Warnings of enemy BW agent development/deployment. FY 07 - Transition COTS QSAR toolsets to the CBDP. Identify and refine applicable QSAR developed by academia and industry, e.g., in pesticide studies, for use in the CBDP to describe interactions between conventional CWA and surfaces/materials of operational interest.	1000	1333	1393	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Continue to identify and refine applicable QSAR developed by academia and industry, e.g., in pesticide studies, for use in the CBDP to describe interactions between conventional CWA and surfaces/materials of operational interest.	1000	1333	1393	0
Threat Agent Sciences, Computational Chemistry - Quantum-Chemical Modeling (QCM) of Chemical Warfare Agent (CWA) Interactions - FY 06/07/08 - Initiate and continue Quantum-Chemical modeling effort to compute the interaction of CWA simulants and real CWAs on oxide surfaces and other surfaces/materials of operational interest. FY 09 - Continue Quantum-Chemical modeling effort to compute the interaction of CWA simulants and real CWAs on oxide surfaces and other surfaces/materials of operational interest. Benchmark and validate the capabilities to predict specific interactions of operational interest. Transition capabilities to Agent Characterization and Simulant Development to provide simulant design and selection methodology for use in Operational Test and Evaluation.	907	1200	1392	1701
Threat Agent Sciences, Computational Chemistry - Quantum-Chemical Modeling (QCM) Tool Development - FY 07/08 - Initiate and continue QCM dataset development to develop QSAR between NTAs and surfaces/materials of operational interest. Intent is to establish expertise and baseline against well-characterized substrates before moving toward human toxicology QSAR toolsets. FY 09 - Continue QCM dataset implementation to establish QSAR between NTAs and surfaces/materials of operational interest. Utilize expertise and baseline against well-characterized substrates and move toward human toxicology QSAR toolsets. Integrate computational chemistry capabilities into experimental planning and data utilization work.	0	2667	2784	3781
Threat Agent Sciences, Science Information Support - FY 06 - Provided support to OSD policy development efforts. FY 07 - Complete OSD policy development efforts. Support the Joint Community for policy development in support of CB Defense Operations. Complete data collection and generation to support policy development.	250	850	0	0
Total	**29460**	**35751**	**24810**	**24307**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
CB2

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	1257	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	1257	0	0
Total	**0**	**1257**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	105134	113081	20662	21028	21935	14241	14310	13823	Cont	Cont
TT3 TECHBASE TECHNOLOGY TRANSITION	13661	12623	7667	8150	8463	8329	9430	9533	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	89183	97730	151712	63773	51565	50672	52948	52995	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH): This project area funds applied research developing vaccines, therapeutic drugs, and diagnostic capabilities which provide an effective medical defense against validated biological threat agents 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 area include core science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics) and directed research areas such the Defense Technology Objectives (DTO), the Chemical and Biological Defense Initiative (CBDI) fund and the Transformational Medical Technologies Initiative or TMTI). The TMTI was launched in FY06 as a key Quadrennial Defense Review initiative to respond to the threat of emerging or intentionally bioengineered biological threats. It augments the core science and technology area by expanding the novel programs currently funded under the core Therapeutics program and introducing new technologies for developmental focus. The TMTI is a novel experiment to develop drugs that are broad spectrum in nature by using non-traditional and high risk approaches to accelerate the development and licensure of new medicines. Applied research efforts supported under this initiative are focused on the evaluation of broadspectrum therapeutic candidates with activity against intracellular pathogen and hemorrhagic fever virus infection, and rapid resequencing technologies. Teaming the core program and TMTI provides a complementary strategy (single agent versus broad spectrum, conventional versus emerging threats and established model systems versus expanded integration of novel technology, respectively) towards the development of effective medical countermeasures against biothreat agents.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	30457	7331	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Advanced Emergency Medical Response Training.	2426	0	0	0
FY 06 - Proteomics R&D improved Drugs and Diagnostics against BW - Investigated the mechanism of action of immunomodulators, to open new paths in development of broad-spectrum adjuvant/immunomodulator drugs and diagnostic tools using differential proteomic analysis.	991	0	0	0
FY 06 - Novel Viral Biowarfare Agent ID and Treatment (NOVBAIT) - Developed a novel approach to anti-viral therapeutics based on high-throughput screening of compounds against intermediates of the virus capsid assembly pathway.	3961	0	0	0
FY 06 - Biowarfare Diagnosis and Therapy via Mismatch Repair - Produced in mass humanized bivalent and trivalent Botulinum neurotoxins.	2526	0	0	0
FY 06 - Global Pathogen Portal (PathPort) - Explored the rapid detection, identification, and forensic attribution of high-priority biothreat pathogens by using analysis and visualization tools.	2476	0	0	0
FY 06 - Institute for Advanced Pharmaceutical Sciences.	991	0	0	0
FY 06 - Rapid Pathogen Amplification and Detection System (RPADS) - Developed a bacteriophage technology that has the potential to improve detection of clinical and environmental agents while decreasing cost, time, and equipment size/weight.	991	0	0	0
FY 06 - Immuno-array - Developed a proteome microarray as a tool for flexible, rapid characterization of new and novel pathogens and expedited development of countermeasures.	991	0	0	0
FY 06 - Bug-to-Drug Program - Integrated existing and emerging biotechnologies to support an end-to-end drug development system which will accelerate the drug development cycle for new biothreat agents.	4952	0	0	0
FY 06 - Marburg Countermeasures - Determined if Phosphorodiamidate Morpholino Oligomers (PMO) can target Marburg virus host factor gene expression.	2971	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
Multi-purpose Biodefense Immuno Array - FY 06 - Developed protein microarrays to measure immune responses to hemorrhagic virus, two pox viruses and bacillus anthracis proteomes. The arrays will provide new knowledge to aid the development of new vaccines, therapeutics and diagnostics. FY07 - Developed protein microarrays to measure immune responses to hemorrhagic virus, two pox viruses and bacillus anthracis proteomes. The arrays will provide new knowledge to aid the development of new vaccines, therapeutics and diagnostics.	1387	1090	0	0
Botulinum Neurotoxin Research (Only for Research on fluorescence resonance energy transfer assays and antagonists) - FY 06 - Developed a new assay which is designed to detect Botulinum (A-G) in the environment and on exposed animals, humans, and culture cells. FY 07 - Develop a new assay which is designed to detect Botulinum (A-G) in the environment and on exposed animals, humans, and culture cells.	2526	2377	0	0
Alternative Delivery Methods for Recombinant Protein Vaccines - FY 06 - Developed countermeasures against bioterrorist attack by evaluating advanced vaccine delivery platforms that can be deployed rapidly and that allow self-vaccination. FY 07 - Develop countermeasures against bioterrorist attack by evaluating advanced vaccine delivery platforms that can be deployed rapidly and that allow self-vaccination.	3268	1882	0	0
FY 07 - Asymmetrical Protocols for Biological Defense Enhancement.	0	991	0	0
FY 07 - National Center for Integrated Civilian-Military Medical Response and Homeland Defense (only for DoD military activities).	0	991	0	0
Total	**30457**	**7331**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

	FY 2006	FY 2007	FY 2008	FY 2009
Transformational Medical Technology Initiative	17486	49087	113024	26169

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Multiagent (Broad Spectrum) Medical Countermeasures -	17486	49087	113024	26169
FY 06 - Initiated pursuit of computer-based technologies that enable the development of small molecule medical countermeasure candidates based upon structure/function analysis of either BW agent or host response pathway target. Initiated development of ex vivo cell-based model systems or minimize requirements for the study of medical countermeasure bioactivity, efficacy and safety. Initiated a rapid re-sequencing technology using state-of-the-art, commercially available microarrays.				
FY 07 - Initiate evaluation of novel compounds for anti-bacterial effects against intracellular bacterial pathogens in preparation for Investigational New Drug (IND) submission. Continue pre-IND studies for antisense RNA therapeutics against hemorrhagic fever virus pathogens. Evaluate novel inhibitors for effectiveness against hemorrhagic fever viruses and intracellular bacterial pathogens. Initiate evaluation of genetic methods for identifying broad spectrum host pathway therapeutic targets. Initiate studies designed to develop and characterize novel immunoadjuvant compounds. Initiate evaluation of specific compounds designed to inhibit key pathogen and/or host target molecules. Expand development of rapid re-sequencing applications and formation of bioinformatics database. Initiate candidate drug development phase.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Continue the evaluation of novel compounds for anti-bacterial effects against intracellular bacterial pathogens in support of IND submission. Evaluate and validate studies of antisense RNA therapeutic candidate drugs against hemorrhagic fever virus pathogens in preparation and support of IND studies. Continue the evaluation of novel inhibitors of hemorrhagic fever viruses and intracellular bacterial pathogens. Continue the evaluation and development of genetic methods for identifying broad spectrum host pathway therapeutic targets. Continue studies designed to develop and characterize novel immunoadjuvant compounds. Expand the evaluation of specific compounds designed to inhibit key pathogen and/or host target molecules. Continue to expand development of rapid re-sequencing applications. Initiate pre-clinical phase. Initiate studies necessary to support an IND application and a Milestone A decision. FY 09 - Continue to evaluate novel compounds for anti-bacterial effects against intracellular bacterial pathogens. Further evaluate and validate studies of antisense RNA therapeutic candidate drugs against hemorrhagic fever virus pathogens in preparation and support of IND studies. Maintain efforts to evaluate novel inhibitors of hemorrhagic fever viruses and intracellular bacterial pathogens. Carry on development of genetic methods for identifying broad spectrum host pathway therapeutic targets and begin the evaluation of new approaches to inhibit these therapeutic targets. Promote studies designed to develop and characterize novel immunoadjuvant compounds. Continue to expand the evaluation of specific compounds designed to inhibit key pathogen and/or host target molecules. Apply rapid re-sequencing technology to real world samples. Initiate clinical phase. Initiate a Phase 1 clinical trial and studies necessary to support a Milestone B decision.	17486	49087	113024	26169
Total	**17486**	**49087**	**113024**	**26169**

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	9708	9879	9274	7665

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies -	8208	6879	7674	7665

FY 06 - Recommended a block improvement to the Joint Biological Agent Identification and Diagnostic System (JBAIDS) Program Office to replace the current DNA extraction kit in the Block I deployment pallet with a Commercial off-the-shelf (COTS) kit; recommendation was accepted. Initiated multi-center study comparing the recommended COTS Block I DNA extraction kit to automated DNA extraction methods. Accelerated development of alternate sampling/extraction techniques to address the JBAIDS Block I gap in sample processing. Designed multiplexed nucleic acid assays for the detection and identification of validated threat agents in clinical samples. Assessed novel technologies, such as microarrays, for suitability as a next generation diagnostic device. Continued to test DoD developed assays, reagents and sample preparation techniques and platforms in field and animal studies. Evaluated newly developed assays targeting the presence of active toxin in a clinical sample. Expanded evaluation of new chemistries for the identification of BWA to latest state-of-the-art methods. Matured recombinant DNA technologies for mass immunodiagnostic reagent production. Continued to build a pathogen database for a Defense Advanced Research Projects Agency (DARPA) transitioned broad range pathogen detection system potentially capable of identifying genetically engineered bacterial strains. Further developed techniques to develop a proteomics microarray to establish an analytic profile for threat agents. Utilized proteomics data to design immunologic assays for BWA detection. Assessed components of future integrated diagnostic systems.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Complete a study examining the COTS Block I DNA extraction kit to automated DNA sample processors and provide recommendation to the JBAIDS Program Office. Using animal models exposed to biothreat agents, identify the optimal matrices/tissues for biological pathogen identification and determine testing windows of diagnostic opportunity using Service developed assays. Expand design of multiplexed assays to include immunoassays. Optimize confirmatory tests for ricin and botulinum toxins. Sponsor laboratory based research targeting the diagnostic implications of biothreat relevant toxins in the body and their relevant analytical parameters. Continue research directed at increasing sample concentration and extending sample viability prior to testing. Augment database for a DARPA transitioned broad range pathogen detection system capable of potentially identifying genetically engineered strains. Utilize proteomics data to design immunologic assays for biological pathogen detection. Maintain technological assessment of components of next generation diagnostic devices. Develop a decision matrix to effectively assess next generation diagnostic devices. Investigate technologies capable of integrating nucleic acid and immunodiagnostic testing to support the JBAIDS next generation diagnostic capability. Pursue rapid sequencing methods to enhance diagnostic capabilities of existing Polymerase Chain Reaction (PCR)-based assays. Initiate development of real time PCR assays to identify genes responsible for antibiotic resistance in biothreat agents. Continue to use recombinant DNA technologies to enhance immunologic reagent production.	8208	6879	7674	7665

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Apply decision matrix to developmental testing on next generation diagnostic devices with an emphasis on technologies capable of integrating sample preparation and nucleic acid and immunodiagnostic testing. Continue a study of laboratory based research targeting the diagnostic implications of toxins in the body and their relevant analytical parameters. For additional agents, use animal models exposed to BWAs to identify the optimal matrices/tissues for biological pathogen identification and determine test windows of diagnostic opportunity. Incorporate multiplexed immunoassays onto existing platforms. Test recombinant DNA reagents on existing immunodiagnostic platforms. Complete a study directed at increasing sample concentration and extending sample viability prior to testing. Complete initial build/validation of a database for a DARPA transitioned broad range pathogen detection system capable of potentially identifying genetically engineered strains. Adapt existing PCR assays to a rapid sequencing platform. Continue to develop real time PCR assays to identify genes responsible for antibiotic resistance in biothreat agents. Validate immunologic assays designed from proteomics data. FY 09 - Continue to apply decision matrix to developmental testing on next generation diagnostic devices with emphasis on technologies capable of integrating sample processing, nucleic acid and immunodiagnostic testing. Based on results, assess/expand study using animal models exposed to biothreat agents in order to identify the optimal matrices/tissues for biological pathogen identification and test windows of diagnostic opportunity using Service developed assays. Promote use of recombinant DNA reagent production and incorporate onto existing systems. Develop improved test assays utilizing new technologies and approaches that enhance diagnosis of early exposure to BWAs. Complete a study of laboratory based research targeting the diagnostic implications of toxins in the body.	8208	6879	7674	7665
Diagnostics, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - FY 06 - Continued to elevate previously transitioned assays to test and evaluation with preference for assays selected for JBAIDS Block I.	1500	1600	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Pursue elevation of previously transitioned assays to test and evaluation with priority for assays selected for JBAIDS Block I.	1500	1600	0	0
Diagnostics, Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies (DTO CB64) - (Transitioned from Emerging Threats) - FY 07 - Demonstrate greater than threefold scale-up of high-throughput experimental protocols and systems for rapid high-throughput microarray-based resequencing. Resequence 10 B. anthracis and 10 Y. pestis group genomes; release data to other relevant DoD projects. Expand biothreat agent collection. Evaluate microarray feature size reduction/increased density on two platforms. Develop resequencing and genotyping arrays for 10 Arenaviruses and 5 Filoviridae viruses. FY 08 - Demonstrate threefold scale-up of experimental protocols and systems. Resequence 30 B. anthracis and 30 Y. pestis group genomes, releasing data to other relevant DoD projects. Expand strain collection, focusing on agents most relevant to warfighters. Evaluate further microarray feature improvements on two microarray platforms. Develop resequencing and genotyping arrays for 15 Bunyaviridae and Togaviradae viruses.	0	1400	1600	0
Total	**9708**	**9879**	**9274**	**7665**

	FY 2006	FY 2007	FY 2008	FY 2009
Emerging Threats	2359	2550	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Emerging Threats, Genetically Engineered Threats - FY 06 - Conducted evaluation of spore germination inhibitors and their effectiveness. Identified virulence factors/toxins and biochemical pathways as targets for the development of countermeasures active against a number of BW agents. FY 07 - Perform research to support the development of countermeasures for genetically engineered threats that will be supported by the Therapeutics program.	866	2550	0	0
Emerging Threats, Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies (DTO CB64) - FY 06 - Initiated installation and design of rapid, inexpensive, high-throughput, microarray-based DNA resequencing of biothreat agent genomes, for bacterial pathogens and RNA viruses whether they are naturally occurring, newly arising, or genetically engineered strains. Developed and implemented collection procedures and expanded biothreat agent strain collection. Evaluated two high-density microarray systems as whole genome resequencing platforms in preparation for whole genome scale-up. Developed data analysis pipeline. Beginning in FY07, DTO CB64 will fall under the Diagnostics Capability area.	1493	0	0	0
Total	**2359**	**2550**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Pretreatments	11125	13261	10428	11963

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Pretreatments, Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - FY 06 - Investigated new EEE vaccine approaches in animal models in combination with WEE and Venezuela Equine Encephalitis (VEE) vaccine construct(s) or alternate VEE vaccine candidates made in the DNA- or replicon-based vaccine platforms. Developed definitive non-human primate model to evaluate the efficacy of separate and combined VEE/WEE/EEE vaccine candidates. Analyzed additional WEE/EEE mutants with various engineered attenuating mutations. Initiated duration of immunity studies with lead candidates for each platform, comparing the individual constructs and trivalent formulations. FY 07 - Initiate the evaluation of live, site-directed mutagenized, attenuated viral vaccines. Perform dose ranging studies in non-human primates (NHPs) for efficacy of multiagent viral vaccine candidates. Assess a combined VEE, EEE, and WEE, vaccine by identifying and characterizing WEE and EEE vaccine constructs that would be appropriate to combine into a single vaccine with a VEE live-attenuated vaccine candidate, or with alternative VEE vaccine candidates made in the DNA- or replicon-based vaccine platforms. Conduct antigen interference studies for the combined VEE/WEE/EEE vaccine in the definitive animal model. Accelerate the construction and evaluation of VEE/WEE/EEE vaccine candidate constructs in various delivery platforms in preparation for down-selection of vaccine candidate platforms. FY 08 - Complete the evaluation of live, site-directed mutagenized, attenuated viral vaccines. Conclude dose ranging studies in NHPs for efficacy of multiagent viral vaccine candidates. Optimize a combined VEE, EEE, and WEE vaccine by identifying and characterizing WEE and EEE vaccine constructs that would be appropriate to combine into a single vaccine with a VEE live-attenuated vaccine candidate, or with alternative VEE vaccine candidates made in the DNA- or replicon-based vaccine platforms. Conclude antigen interference studies for the combined VEE/WEE/EEE vaccine in the definitive animal model. Perform down-selection of vaccine candidate platforms. DTO CB58 ends in FY 2008.	605	1247	500	0
Pretreatments, Multiagent Vaccines, Multi-agent (molecular) Vaccines for Bio-Warfare Agents (DTO CB65) -	2500	3400	3000	4000

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Identified pathogens to be targeted as the third component of a trivalent vaccine and initiated candidate antigen incorporation into vaccine constructs for evaluation. Explored both molecular and protein-based multivalent vaccine platforms. Developed the optimal DNA backbone in combination with adjuvant formulation. Evaluated multi-epitope DNA vaccine constructs. Explored the use of alternative delivery strategies for optimizing the efficacy of genetic immunization. Investigated DNA vector delivery systems that stimulate protective immunity following minimal dosing.	2500	3400	3000	4000
FY 07 - Express select bio-threat agent target antigens and assess immunogenicity and protective efficacy in animal models alone and in combination with anthrax and plague elements. Develop the use of Virus-Like Particles (VLPs) for multiagent vaccine development. Characterize the underlying protective response and evaluate for possible interference phenomena. Continue to explore alternative genetic vaccine delivery strategies and adjuvant formulations. Conduct a comparative analysis of genomic and recombinant vaccine candidates for efficacy. Assess multiepitope DNA vaccine constructs. Initiate studies using a multivalent spore display platform.				
FY 08 - Assess immunogenicity and efficacy of multivalent vaccines which include anthrax and plague elements. Define protective responses and evaluate possible interference phenomena in multiagent formulations. Expand the use of VLPs as well as other potential platforms for multiagent vaccine development. Continue to explore alternative genetic vaccine delivery strategies and adjuvant formulations for the development of immunity against intracellular bacterial pathogens. Conduct efficacy testing of genomic and recombinant vaccine candidates. Optimize multiepitope DNA vaccine constructs. Continue the evaluation a multivalent spore display vaccine platform.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Optimize multiagent vaccines which include anthrax and plague components in animal models. Test multiagent VLPs for efficacy in animal models. Characterize the underlying protective response and evaluate for possible interference phenomena. Optimize alternative genetic vaccine delivery strategies and novel adjuvant formulations for the development of vaccines against intracellular bacterial pathogens. Finalize efficacy testing of genomic and recombinant vaccine candidates. Complete testing of genomic and recombinant vaccine candidates, particularly multiepitope DNA vaccine constructs. Test spore-based vaccines in animal models.	2500	3400	3000	4000
Pretreatments, Multiagent Vaccines - (Formerly under Animal Models and Resuscitative Intervention) - FY 06 - Explored genomics/proteomics-based high throughput approaches to identify potential vaccine target antigens. Evaluated the use of VLPs to induce an immune response against targeted antigens and characterize the nature of the response. Initiated evaluation of DNA-based immunization platforms. Explored the use of novel approaches to antigen presentation including recombinant protein and/or fusion protein constructs. Investigated the uses of CpG oligonucleotides as vaccine adjuvants. FY 07 - Expand studies of genomics/proteomics-based high throughput approaches to identify potential vaccine target antigens for selected biothreat agents. Assessment of candidate anthrax/plague/ricin multi-agent vaccines in animal models. Continue development and refinement of in vitro correlates of immunity against intracellular bacterial pathogens. Determine efficacy/immunogenicity and optimization studies of new antigen vaccine formulations considering alternative adjuvants, routes of administration, and dosage schedules. Evaluate novel delivery systems for enhanced vaccine delivery and efficacy in support of the rapid development of multiagent vaccines. Investigate whether CpG oligonucleotides provide enhancement as vaccine adjuvants. Explore aspects of the innate immune response for possible adjuvant effects applicable to vaccine development.	700	2390	1877	1436

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Conduct further animal studies for development of candidate anthrax/plague/ricin multi-agent vaccine. Maintain studies of in vitro correlates of immunity for select candidate vaccine projects. Pursue optimization studies of new antigen vaccine formulations considering alternative adjuvants, routes of administration, and dosage schedules. Evaluate systems for the rapid development of multiagent vaccines, including novel vaccine platforms and novel delivery systems for enhanced vaccine delivery of selected vaccine candidates. Review candidate vaccines for down-selection to primary candidates. FY 09 - Continue the assessment of candidate anthrax/plague/ricin multi-agent vaccine in animal models. Pursue advanced genetic vaccine delivery strategies for selected vaccines and evaluate efficacy in animal models.	700	2390	1877	1436
Pretreatments, Vaccine Research Support - FY 06 - Evaluated intracellular pathogen candidate antigens using animal model systems including the use of alternative delivery platforms. Initiated B and T cell epitope mapping of lead protective antigen candidates. Assessed in vitro correlates of immunity for specific threat agents. Investigated novel antigen targets for next generation anthrax and plague vaccine development. Evaluated the immunogenicity of intact catalytic and translocation domains of botulinum neurotoxins (BoNT). Continued developing in-process and release assays for recombinant BoNT Hc vaccine candidates. Cloned and expressed proposed Staphylococcal Enterotoxin A (SEA)/Staphylococcal Enterotoxin B (SEB) structural determinants; determined stability of immunogens; raised neutralizing antibodies against immunogens and test for cross-reactivity among SE serotypes using in vitro systems. Compared various adjuvants and routes of administration for the V3526 (VEE) vaccine candidate. Explored additional uses of VLPs as antigen delivery platforms for filovirus vaccine development.	5286	3794	2444	3536

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Explore additional intracellular pathogen target antigens using animal model systems including the use of alternative delivery platforms. Continue B and T cell epitope mapping of lead protective antigen candidates. Expand studies on the immunogenicity of intact functional domains of botulinum neurotoxins (BoNT). Evaluate immunogenicity of enhanced next generation anthrax and/or plague vaccine candidates. Continue to characterize in vitro correlates of immunity for specific threat agents. Identify novel antigen targets for next generation anthrax and plague vaccine development in animal models. Begin evaluating the protective efficacy of intact catalytic and translocation domains of botulinum neurotoxins (BoNT). Evaluate filovirus cellular immunity parameters. Develop animal models for Ebola Sudan strain.	5286	3794	2444	3536
FY 08 - Down-selection to candidate vaccines for advanced development. Validate additional intracellular bacterial pathogen target antigens using animal model systems. Continue B and T cell epitope mapping of lead protective antigen candidates. Continue studies on the immunogenicity and efficacy of intact functional domains of BoNT. Evaluate the efficacy of enhanced next generation anthrax and/or plague vaccine candidates in animal models. Continue to evaluate in vitro correlates of immunity for specific threat agents. Pursue development of filovirus immunoassays and examine contributions of the cellular immune responses. Conclude animal model development for the Ebola Sudan strain.				
FY 09 - Develop validation assays for selected candidate vaccines for advanced development. Conduct toxicity analyses of selected vaccine candidates in preparation for IND submission. Optimize intracellular pathogen target antigens and prepare to test in non-human primate models. Continue the exploration of additional intracellular pathogen target antigens using animal model systems including the use of alternative delivery platforms. Complete B and T cell epitope mapping of lead protective antigen candidates. Complete evaluation of the protective efficacy of intact functional domains of BoNT in small animal models; prepare for non-human primate studies. Prepare to evaluate enhanced next generation anthrax and/or plague vaccine candidates in non-human primates. Optimize filovirus immunoassays and evaluate their ability to predict protection.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Pretreatments, Vaccine Technology Development - (formerly under Resuscitative Intervention) -	2034	2430	2607	2991
FY 06 - Tested novel adjuvants designed to enhance the efficacy of genetic vaccines in non-human primates (e.g. toll-like receptor agonists, cationic antimicrobial peptides, immunostimulatory oligonucleotides). Accelerated the development and design of generic gene-based vaccines targeting common target sequences in pathogens. Explored gene-based poxvirus vaccines. Developed targets for a generic Bacillus molecular vaccine. Expanded effort in vaccine development to include the evaluation of novel immunization platforms and therapeutic immunization strategies for post-exposure treatment. Assessed user-friendly vaccination modalities which confer rapid protection following minimal dosing.				
FY 07 - Initiate evaluation of a Bacillus generic molecular vaccine in animal models. Continue development of gene-based poxvirus vaccines and determine immunogenicity and efficacy in animal models. Determine adjuvant formulations/systems, including oligonucleotide-based, that enhance the efficacy of molecular vaccines in animal models. Expand alternative immunization platforms such as VEE replicons for efficacy against selected biothreat pathogens and/or toxins. Continue the exploration of candidate vaccine efficacy in conjunction with Toll-like receptors (TLR)-agonist delivery and/or recombinant interleukins. Determine cross-reactive epitopes/antigens which may confer immunity against selected bio-threat agents. Continue assessment of user-friendly vaccination modalities which confer rapid protection following minimal dosing. Pursue efforts in vaccine development to include the evaluation of novel immunization platforms and therapeutic immunization strategies for post-exposure treatment.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Assess the immunogenicity of a Bacillus generic molecular vaccine in animal models. Optimize gene-based poxvirus vaccines and determine immunogenicity and efficacy in Non-human primate models. Continue to explore adjuvant formulations/systems, including oligonucleotide-based, that enhance the efficacy of molecular vaccines in animal models. Validate alternative immunization platforms such as VEE replicons for efficacy against selected biothreat pathogens and/or toxins. Test the ability of TLR-agonist delivery and/or recombinant interleukins to enhance vaccine efficacy in animal models. Initiate evaluation of cross-reactive antigens which may confer immunity against selected bio-threat agents in animal models. Pursue identification and testing of user-friendly vaccination modalities which confer rapid protection following minimal dosing.	2034	2430	2607	2991
FY 09 - Assess the efficacy of a Bacillus generic molecular vaccine in non-human primate animal models. Prepare gene-based poxvirus vaccine candidate for possible Investigational New Drug (IND) studies. Optimize oligonucleotide-based adjuvant formulations or other systems that enhance the efficacy of molecular vaccines in animal models. Test alternative immunization platforms, such as VEE replicons, for efficacy against selected biothreat agents in appropriate animal models. Optimize the use of TLR-agonist delivery and/or recombinant interleukins to enhance vaccine efficacy in animal models. Continue to identify cross-reactive epitopes/antigens which confer immunity against multiple bio-threat agents. Assess user-friendly, self-administered vaccination modalities which confer rapid protection following minimal dosing.				
Total	**11125**	**13261**	**10428**	**11963**

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	18048	14678	18986	17976

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - FY 06 - Conducted initial evaluation in pock lesion variola primate model at the Centers for Disease Control and Prevention. Evaluated oral cidofovir prodrug against monkeypox in primate model to determine drug efficacy. Evaluated minimal and sufficient viral therapeutic requirements such as dose, route, pharmacokinetics, and pharmacodynamics. Performed appropriate testing in non-human primates for FDA licensure consideration under the FDA Animal Efficacy Rule. Oral cidofovir achieved investigational new drug (IND) status for the smallpox indication. FY 07 - Conduct advanced efficacy studies of the oral prodrug of cidofovir as a therapy for smallpox, to support preparation of a new drug application (NDA) package for the FDA. Perform FDA required studies to support transition of ST-246, as an oral therapeutic for orthopox virus infection, to advanced development. Additional studies to support the transition of oral therapeutics to advanced development will be supported by the Viral Therapeutics program (TB3) in 2008. Complete DTO CB54.	1815	1800	0	0
Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - FY 06 - Concluded studies to select anti-Marburg monoclonal antibodies for molecular reengineering and primate testing. Initiated shift from discovery of protein targets for Marburg virus therapy to testing of compounds to inhibit protein-protein interactions. Expanded characterization of the role of neutrophils in innate and adaptive immunity to Marburg virus, focusing on cellular pathways possibly common to many viruses. Evaluated the utility of recombinant nematode anticoagulant protein c2 (rNAPc2) against Marburg hemorrhagic fever in non-human primates. Completed DTO CB63.	500	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Therapy for Ebola and Marburg Virus Infections (DTO CB67) - FY 07 - Initiate evaluation of therapeutic technologies developed in DTO CB63 against the Ebola virus and Marburg virus in vitro and in animal models. Technologies include antisense oligonucleotides, recombinant human monoclonal antibodies, small interfering RNAs (siRNAs), small molecules, and therapeutic vaccines. Improve existing animal models for filoviral hemorrhagic fever. Initiate preliminary comparative efficacy studies to identify best performing strategies. FY 08 - Optimize dose and regimen for therapeutic technologies in relevant animal models of Ebola virus and Marburg virus. Evaluate lead candidates for specific viral therapeutic requirements including pharmacokinetics and pharmacodynamics. FY 09 - Complete proof-of-concept studies for lead candidate technologies as they transition to development.	0	2331	1372	811

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Viral -	3129	3230	588	430
FY 06 - Screened novel and currently available antiviral technologies, including interferons, Virus Like Particles (VLP), small interfering RNA (siRNA), small compounds, artificial nucleases and monoclonal antibodies, against viral threat agents in vitro. Evaluated lead candidates using in vivo efficacy models. Developed additional applied technologies that integrate established and emerging viral therapeutic modalities into suitable candidate therapies.				
FY 07 - Maintain multi-pronged approach to discovery and development of antiviral technologies against traditional and emerging viral threat agents in vitro and in vivo. Incorporate in silico screening into the drug discovery process. Assess lead candidates for specific viral therapeutic requirements such as dose, route, pharmacokinetics, pharmacodynamics. Investigate the use of metal nanoparticles as antiviral therapeutics. Explore adjuvant immunomodulatory and host-response therapeutic interventions in in vitro and in vivo systems.				
FY 08 - Optimize key dosing, administration, and pharmacological characteristics of leading antivirals in non-human primate models. Utilize in silico, in vitro and in vivo models to consider novel and currently available antiviral technologies as therapeutics against traditional and emerging viral threat agents. Screen metal based nanomaterials for their ability to inhibit isolated viral enzymes. Develop immunomodulatory and host-response interventions as adjuvants to existing and emerging antiviral therapeutics.				
FY 09 - Determine dose dependent inhibition of viral expression by nanomaterial based therapeutics in an in vitro model system. As therapeutics effective against existing threats progress to advanced development, conduct proof-of-concept studies aimed at identifying therapeutic candidates for emerging and genetically engineered threats.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Bacterial - FY 06 - Screened novel and currently available antibiotic technologies against anthrax, plague, and burkholderia infections. Technologies include small molecules, antimicrobial peptides, monoclonal antibodies, RNA inhibitors, and cytokine-based therapeutic candidates. Evaluated CpG motifs and heat shock protein 70 (HSP70) (stimulators of the immune response) as immunomodulators to be used in conjunction with bacterial therapeutics. FY 07 - Refine conceptual development and execute in vivo testing of novel broad-based innate immunomodulator therapeutic approaches against naturally occurring and genetically engineered category A and B bacterial pathogens. Consider specific licensed and investigational antibacterial technologies for use against these agents. Initiate development of a nanobody based immunotherapeutic against plague. Develop a screening assay to identify small molecule therapeutic candidates that mimic bacteriophage activity. FY 08 - Examine the utility of newly FDA approved, and newly discovered antibiotics as therapeutics against bacterial threat agents. Conduct proof-of-concept evaluation of a nanobody based immunotherapeutic against plague. Evaluate small molecules with bacteriophage-like activity against plague in vitro. Expand the effort to develop novel bacterial therapeutics with activity against specific threat agents, especially tularemia, plague, and burkholderia. FY 09 - Complete initial evaluation of a nanobody based immunotherapeutic against plague, and extend application to other gram negative bacteria if successful. Screen small molecules with bacteriophage-like activity against plague in vitro, and extend application of assay to other gram negative bacteria. Balance efforts to evaluate potential bacterial therapeutics with both broad-spectrum activity, and activity against specific threat agents.	3574	2901	6404	6142
Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) -	1064	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Developed lead mixtures of human antibodies against Botulinum Neurotoxin (BoNT) as passive immunotherapeutics in vivo. Completed in vitro testing of combinations of monoclonal antibodies against multiple BoNT serotypes and proof-of-concept studies with lead BoNT active-site inhibitors and/or receptor antagonists in vivo using qualified surrogate endpoints of human clinical efficacy. Developed a strategy for development of BoNT therapeutic candidates. Completed DTO CB59.	1064	0	0	0
Therapeutics, Toxin - FY 06 - Evaluated novel and currently available anti-toxin technologies against ricin toxin, Staphylococcal Enterotoxin B (SEB) and BoNT in vitro and in vivo. Technologies include small molecules, peptides, natural products and monoclonal antibodies. Tested efficacy of combinations of monoclonal antibodies against multiple BoNT serotypes in cell-based systems. Continued ongoing proof-of-concept studies with lead toxin therapeutics in vivo using qualified surrogate endpoints of human clinical efficacy. Defined the key linking technologies (peptide binding design, candidate delivery systems) that have relevance to eventual human clinical efficacy trials for toxins. FY 07 - Select lead monoclonal antibodies with therapeutic potential by employing in vitro and in vivo assay systems. Increase efforts to identify new SEB inhibitors. Examine the therapeutic potential of drug candidates with activity against ricin, SEB and BoNT in vitro and in vivo. FY 08 - Design and develop monoclonal antibodies with improved binding activity utilizing data generated from structural analysis of the BoNT receptor site. Identify potential inhibitors from compound repositories and peptide libraries using computer-modeling and co-crystal analysis. Evaluate small molecule, monoclonal antibody and single-chain antibody peptides against SEB.	3923	4416	10622	10593

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Evaluate next generation monoclonal antibodies for in vitro and in vivo efficacy against BoNT. Characterize lead compounds for potency and specificity via protease inhibition studies, cell-based assays, and in vivo bioassays. Initiate development of non-toxic mutants of BoNT as therapeutics with the potential to restore synaptic activity following neuroparalysis due to intoxication.	3923	4416	10622	10593
Therapeutics, Resuscitative Intervention - FY 06 - Developed combined injury animal model (trauma and Biological Warfare (BW)/Chemical Warfare (CW) agent) for testing therapeutics against a vapor nerve agent, a low-volatility nerve agent, and a particulate chemical agent threat. Developed combined injury animal model (trauma and BW/CW agent) for a vesicating agent. Identified early markers via genomic or proteomic analysis, and physiologic status of interactive effects of combined injury in appropriate animal model. Conducted initial evaluation of the pock lesion/variola primate model at the Centers for Disease Control. Expanded characterization of the monkeypox vs. primate-small pox model to prepare data packages for oral prodrug licensure.	4043	0	0	0
Total	**18048**	**14678**	**18986**	**17976**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	944	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	944	0	0
Total	**0**	**944**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TB2

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	87910	89678	146539	299581	229306	129419	122230	113827	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	27172	30796	36881	37072	35033	33328	38282	38614	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH): This project funds medical chemical defense applied research and emphasizes the treatment and prevention of chemical casualties as well as the investigation of new medical countermeasures to include prophylaxes, pretreatments, antidotes, skin decontaminants and therapeutic drugs to protect U.S. forces against known and emerging chemical warfare threat agents. Capabilities are maintained for reformulation, formulation and scale-up of candidate compounds using current Good Laboratory Practices (cGLP).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	2526	991	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Mustard Gas Antidote Research Consortium (STIMAL) - FY 06 - Developed an antidote to mustard gas (HD) exposure. FY 07 - Develop an antidote to mustard gas (HD) exposure.	2526	991	0	0
Total	**2526**	**991**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	1333	1467	1270	1411

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies -	499	467	1270	1411
FY 06 - Continued applied research experiments aimed at improving detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare agent (CWA) exposure. Finalized assessment of a noninvasive immunodiagnostic test using skin tape stripping to detect sulfur mustard skin exposure before the onset of vesication. Further developed alternate sample collection/extraction technology(s) such as solid phase micro-extraction as a rapid screening method to verify exposure to CWA; performed studies assessing the suitability of different fibers to extract nerve agent metabolites from synthetic urine and their time related stability and sensitivity. Using the DoD developed whole blood cholinesterase assay for organophosphate exposure, assessed a healthy population with no known exposure for known test marker inhibitors and atypical marker phenotypes. Established baseline studies, prepared standard curves, established linearity and limits of detection and performed quantification studies for assay development for additional selected chemical agents.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Accelerate applied research experiments aimed at improving detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from CWA exposure. Continue to develop alternate sample collection/extraction technology(s) such as solid phase micro-extraction as a rapid screening method to verify exposure to CWA; complete fiber selection for nerve agents and evaluation of head space versus direct immersion for nerve agents. Pursue adaptation of the DoD developed whole blood cholinesterase assay for organophosphate exposure to automation/high throughput; examine changes in marker profiles after exposure to low level amounts of nerve agents and organophosphate pesticides and conduct feasibility studies for incorporating this method in a hand-held platform. Characterize relationship between dose, route-of-exposure, time-concentration of measured biomarker for the fluoride detection assay to detect VX nerve agent.	499	467	1270	1411
FY 08 - Continue development alternate sample collection/extraction technology(s) such as solid phase micro-extraction as a rapid screening method to verify exposure to CWA; complete reproducibility studies for hydrolysis compounds and optimize fibers for select agents. Initiate development of a beta-lyase urinary metabolite assay. Develop a sample extraction technique and test method to detect the presence of chemical warfare analytes from hair samples. Investigate the feasibility of adapting immunodiagnostic and molecular technologies to hand-held CWA diagnostic platforms in biological samples by reviewing Small Business Innovation Research (SBIR) projects utilizing new technologies such as DNA aptamers, molecularly imprinted polymers (MIPS), lateral flow immunoassay and high affinity antibodies in conjunction with electrochemical and or fluorometric amplification/detection. Assess the feasibility of transitioning established lab-based procedures such as fluoride reactivation to field portable technology.				
FY 09 - Complete/make recommendations for alternate sample collection/extraction technology(s) such as solid phase micro-extraction as a rapid screening method to verify exposure to CWA. In animal models, evaluate the combined sample extraction and analysis procedure pre-and post CWA exposure to assess the feasibility of detecting chemical warfare analytes in hair samples. Incorporate promising SBIR technology into the core program for further development.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Diagnostics, Animal Models - FY 06 - Conducted animal studies for detecting biomarkers of CWA exposure in biological samples; explored longevity of biomarkers for the sulfur mustard blood protein adduct assay and fluoride reactivation assay by utilizing/interfacing with ongoing relevant animal exposure models. Assessed ability of immunohistological and specialized protein detection techniques to detect sulfur mustard-induced skin changes in relevant animal models. FY 07 - Continue to conduct animal studies for detecting biomarkers of CWA exposure in biological samples; complete studies exploring the longevity of biomarkers. Conduct metabolic profile (metabonomic) studies by examining blood from guinea pigs exposed to agent and assess the potential of this method as a diagnostic technique.	834	1000	0	0
Total	**1333**	**1467**	**1270**	**1411**

	FY 2006	FY 2007	FY 2008	FY 2009
Emerging Threats	2681	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Emerging Threats, Non-Traditional Agent (NTA) Medical Countermeasures - FY 06 - Compared non-traditional and conventional nerve agents for induction of neurochemical changes. Evaluated countermeasures against non traditional cytokine agents (e.g., effect on inflammation reaction and bronchoconstriction). Identified target molecules for intervention against peptide NTAs and additional convulsant agents. Continued the development of an animal model for peptide NTAs. Transitions to Therapeutics in FY07.	2681	0	0	0
Total	**2681**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

	FY 2006	FY 2007	FY 2008	FY 2009
Pretreatments	4904	8046	8270	8451

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Pretreatments, Nerve Agent, Bioscavengers - FY 06 - Initiated the development of genetic knock-out murine animal models for catalytic bioscavenger studies. Evaluated different delivery systems for administration of recombinant and/or catalytic bioscavengers in vivo. Assessed human protein recombinant and catalytic bioscavengers, including the role of various amino acids near the active site in binding and turnover based on 3-D structure determination, molecular models, and site-specific amino acid mutations. FY 07 - Investigate recombinant methods and expression systems for larger scale production and purification of recombinant and catalytic bioscavenger proteins. Perform initial evaluation studies of catalytic bioscavenger molecules in genetic knock-out mice. Develop knock-out murine models for evaluation of recombinant and catalytic bioscavenger molecules. Conclude studies of the 3-D structure of human bioscavenger proteins. Continue development of peptide drugs as potential bioscavenger molecules. Identify new native/recombinant catalytic bioscavengers molecules. Define methods to improve/modify the catalytic efficiency of selected bioscavenger molecules. Evaluate more efficient delivery formulations. Refine methods(s) to significantly reduce or eliminate the inherent immunogenicity of recombinant bioscavenger molecules.	4904	8046	8270	8451

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Evaluate recombinant methods and expression systems for larger scale production and purification of recombinant and catalytic bioscavenger proteins. Conduct studies of catalytic bioscavenger molecules in genetic knock-out mice. Continue to develop peptide drugs as potential bioscavenger molecules in animal models for safety and efficacy. Explore novel native/recombinant catalytic bioscavenger molecules. Utilize novel methods to improve/modify the catalytic efficiency of selected bioscavenger molecules. Assess new, more efficient delivery formulations. FY 09 - Refine recombinant methods and expression systems for larger scale production and purification of recombinant and catalytic bioscavenger proteins. Investigate catalytic bioscavenger molecules in genetic knock-out mice. Optimize dose and route of administration of peptide drugs as potential bioscavenger molecules. Assess efficacy of novel catalytic bioscavenger molecules. Evaluate bioscavenger molecules with increased catalytic efficiency. Test new, more efficient delivery formulations in animal models.	4904	8046	8270	8451
Total	**4904**	**8046**	**8270**	**8451**

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	15728	19994	27341	27210

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Respiratory and Systemic - FY 06 - Refined and integrated animal models with screening protocols for therapeutic studies, including the novel use of macrolide antibiotics to protect against lung injury. FY 07 - Identify relevant endpoints for in vivo models. Screen compounds as therapeutic countermeasures against single and multiple agent exposures. FY 08 - Complete protocol and in vivo model optimization. Utilize human tissue model of inhalational exposure to screen therapeutics to protect against lung injury. Evaluate and down-select candidate compounds focusing on countermeasures effective against multiple agent exposures. FY 09 - Continue focus on broad based therapeutics effective against multiple agents and routes of exposures.	1357	3411	4039	3937

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Cutaneous and Ocular -	4244	2711	1905	1940

FY 06 - Completed development of advanced animal injury models, including (1) a sulfur mustard wound healing model using non-human primates for advanced efficacy studies, (2) a hybrid sulfur mustard-thermal burn model using weanling pigs, and (3) rodent wound healing models to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries. Utilize these models to evaluate commercially available wound healing products, and investigational products (e.g. antioxidant containing liposomes) for their efficacy in promoting improved healing of superficial dermal sulfur mustard injuries. Assessed instrumentation to evaluate the depth of cutaneous vesicant injury, for use as a prognostic indicator. Evaluated the effectiveness of new commercial skin decontamination formulations to agent challenge as a function of time. Considered novel decontaminating wound products that can be applied before or after exposure. Studied multi-photon imaging as a therapeutic modality.

FY 07 - Complete efforts to develop in vitro tissue assays and design screening protocols to down-select candidate compounds. Initiate protocols and screen novel compounds, as well as FDA approved drugs, as therapeutics to counteract the effects of cutaneous and ocular exposure to chemical agents using in vitro and in vivo techniques. Characterize the depth of cutaneous vesicant injury. Compare the effectiveness of novel technologies to replace the M291 skin decontamination kit (SDK), focusing on products to decontaminate wounds and around the eyes. Characterize the treatment effect of compounds on neovascularization in ocular tissue, using small animal models and focusing on both gross and molecular injury and healing as a function of time.

FY 08 - Maintain screening efforts to evaluate new and FDA approved compounds, and down-select those shown to be efficacious using in vitro and in vivo techniques. Determine the best candidate technologies for preventing and reversing damage to the eye following vesicant agent exposure.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Evaluate safety, efficacy, dosing and relevant pharmacokinetic and pharmacodynamic profiles of candidate countermeasures, and practicality of use in the modern combat environment.	4244	2711	1905	1940
Therapeutics, Neurologic - FY 06 - Developed and refined screening protocols to down-select therapeutic candidates within a number of drug classes, including anticonvulsants anti-epileptics, neurosteroids, serotonin receptor agonists, serine racemase inhibitors, and antioxidants. Evaluated the efficacy of novel anticonvulsant compounds against nerve agent-induced seizures using in vivo models. Determined the efficacy of midazolam, and/or anticholinergic compounds against nerve agent-induced seizures and lethality. Assessed pharmacokinetics of lead anticonvulsants against organophosphates. Refined animal models and validated small and large animal neurobehavioral test batteries. Investigated long-term neuroprotective strategies. FY 07 - Explore potential broad spectrum reactivators to nerve agent challenge (peripheral and centrally acting). Synthesize prospective candidate reactivators and conduct reactivation studies to determine efficacy and toxicity in vitro/in vivo. Optimize therapy for effective treatment of seizures under all potential field conditions (immediate or delayed treatment). Screen putative neuroprotectants that have demonstrated effectiveness in neuronal rescue, particularly Food and Drug Administration (FDA)-approved products which may have additional neuroprotective activity. Apply screening protocols to novel compounds. FY 08 - Expand the search for improved reactivators. Evaluate bioscavengers as post-exposure therapeutics against nerve agents. Further evaluate FDA approved products demonstrating neuroprotective activity for in vivo efficacy against nerve agent exposure. FY 09 - Identify and develop broad-spectrum improved reactivators based on the mechanism of action of reactivation. Down-select novel and FDA approved anticonvulsants, neuroprotectants, anti-epileptics, and receptor agonists and antagonists for neuroprotective activity against nerve agents. Define and optimize the utility of therapeutic bioscavengers.	9656	8996	9345	9442
Therapeutics, Medical Toxicology - Non Traditional Agents (NTAs) and Other Agents -	0	3831	2235	2225

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Investigate the potential for transient or sustained systemic toxicity resulting from exposure to NTAs and selected chemical warfare agents. Identify mechanisms of toxicity and establish a scientifically-defendable quantitative means of predicting consequent health effect in human operators. Emphasis is placed on developing computational tools that extend the utility of laboratory data for improving operational risk assessment and countermeasure therapy design. FY 08 - Extend the fidelity of predictive and computational tools by expanding the scope of validation studies to include multiple classes of NTAs. Develop appropriate animal model systems for non-traditional modes of toxicity. FY 09 - Quantify the nature, scope, and time course of exposure/effects using biochemical, toxicological, physiological, and modeling methods as required for therapeutic and clinical strategy design.	0	3831	2235	2225
Therapeutics, Non Traditional Agents (NTAs) - FY 08 - Evaluate the efficacy of currently available therapeutics for treatment resulting from exposure to NTAs and selected chemical warfare agents. Focus on therapies for respiratory injury following inhalational exposure and non-cholinergic mediated neurological injury, using small animal models. Investigate the efficacy of the stoichiometric bioscavenger as a post-exposure therapy. FY 09 - Evaluate pre-existing and new commercially available compounds for respiratory and neurological injury in small animal models and begin transition to large animal models (e.g. non-human primate). Initiate testing of novel compounds as therapies in small animal models. Define and optimize the utility of therapeutic bioscavengers against NTAs.	0	0	9817	9666

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Animal Models - FY 06 - Developed a non-human primate percutaneous testing model for chemical warfare agent exposure. Assessed an alternate non-human primate model by determining basic immunological and physiological parameters and validating literature findings in order to demonstrate a mechanistic bridge to humans. Evaluated the non-human primates, and the Marmoset, as alternate non-human primate models by: determining the toxicity of nerve agents sarin, tabun, cyclosarin, VX, VR, and selected NTAs; determining the efficacy of currently licensed medical countermeasures against this panel of chemical warfare agents. FY 07 - Improve advanced non-human primate testing for chemical warfare agent exposure. Evaluate alternate models to meet FDA rules in a cost-effective manner. Transitions to other thrust areas in FY08.	471	1045	0	0
Total	**15728**	**19994**	**27341**	**27210**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	298	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	298	0	0
Total	**0**	**298**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TC2

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	20499	18225	28976	28526	29218	30777	31833	32133	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TR2

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TR2	MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)	1258	1570	1990	1990	1990	1990	1990	1989	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TR2 MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH): This area funds applied research to develop pretreatments for providing an effective medical defense against validated radiological threats. Innovative technical approaches and advances will be utilized to mitigate the health consequences from exposures to ionizing radiation which would represent a significant threat to US forces in current tactical, humanitarian, and counter terrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both the short- and long-term risks of radiation exposure. Accurate models to predict casualties will promote effective command decisions and force structure planning.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	971	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Radioprotectants, Advanced Neutron Radiography - FY 06 - Delivered a laboratory prototype of a neutron radiography system that would support the development of a field-deployable, high-capability, neutron radiography system operable by military personnel, without exceptional training.	971	0	0	0
Total	**971**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TR2

	FY 2006	FY 2007	FY 2008	FY 2009
Radioprotectants	287	1555	1990	1990

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Radioprotectants - FY 06 - Identified four agents for radioprotective efficacy studies in a rodent model. FY 07 - Continue radioprotective efficacy studies and explore additional new compounds for radioprotective efficacy studies. Assess the more promising candidates to determine the radiological treatment dose efficacy for radioprotection and develop protocols for evaluation in a rodent model system. Assess cytokine expression in rodents for most promising candidates against acute radiation syndromes. FY 08 - Evaluate three to four drug candidates for radioprotective efficacy. Using promising candidates, initiate preliminary studies for preclinical efficacy of combined agents, if any, which confer protective or palliative effects against radionuclides with minimal toxic side effects. FY 09 - Continue to evaluate at least two promising drug candidates promising radioprotective efficacy. Determine the preclinical efficacy of combined agents that confer protective or palliative effects against radionuclides with minimal toxic side effects. Explore current Good Laboratory Practice (cGLP) test capability for selected candidate drugs against acute radiation syndromes according to the Food and Drug Administration (FDA) animal rule.	287	1555	1990	1990
Total	**287**	**1555**	**1990**	**1990**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA2 - Applied Research

PE NUMBER AND TITLE
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)

PROJECT
TR2

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	15	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	15	0	0
Total	**0**	**15**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TR3 MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	2153	2189	4825	2487	995	0	0	0	12649

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BUDGET ACTIVITY 3
ADVANCED TECHNOLOGY DEVELOPMENT (ATD)

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	227204	235760	232302	388487	313810	203549	193416	184822	Continuing	Continuing
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	105134	113081	20662	21028	21935	14241	14310	13823	Continuing	Continuing
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	87910	89678	146539	299581	229306	129419	122230	113827	Continuing	Continuing
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	20499	18225	28976	28526	29218	30777	31833	32133	Continuing	Continuing
TE3	TEST & EVALUATION (ATD)	0	0	26269	26377	22401	19788	15613	15506	Continuing	Continuing
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	2153	2189	4825	2487	995	0	0	0	12649
TT3	TECHBASE TECHNOLOGY TRANSITION	13661	12623	7667	8150	8463	8329	9430	9533	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

A. Mission Description and Budget Item Justification: This program element (PE) demonstrates technologies that enhance the ability of U.S. forces to defend against, and survive chemical and biological (CB) warfare. This program element (PE) funds advanced technology development for Joint Service and Service-specific requirements in both medical and physical sciences CB defense areas. The medical program aims to produce drugs, vaccines, and medical devices as countermeasures for CB 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. These demonstrations, conducted in an operational environment with active user and developer participation, integrate diverse technologies to improve DoD Chemical/Biological Warfare (CBW) defense and deterrence. These demonstrations are leveraged by the Counterproliferation Support Program and include remote Biological Detection. Also research efforts are planned to evaluate technologies for Weapons of Mass Destruction Civil Support Teams (WMD-CSTs). Work conducted under this PE transitions to and provides risk reduction for System Integration/Demonstration (PE 0603884BP/PE 0604384BP) activities. 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 BW operational awareness, and the restoration of operations following a BW/CW attack. This program is dedicated to conducting proof-of-principle field demonstrations, and tests of system-specific technologies to meet specific military needs.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	234039	207114	259667	320350
FY08 President's Budget	227204	235760	232302	388487
Total Adjustments	-6835	28646	-27365	68137
a. Congressional General Reductions	0	-20894	0	0
b. Congressional Increases	0	49540	0	0
c. Reprogrammings	-4159	0	0	0
d. SBIR/STTR Transfer	-2278	0	0	0
e. Other Adjustments	-398	0	-27365	68137

Change Summary Explanation:

Funding: FY08 - Establish separate project to develop new test and evaluation methodologies and testing capabilities (+$26,269K TE3). Other fund adjustments and realignments (-$51,834K CB3; +$3,500K TB3; -$2,836K TC3; -$2,252K TR3; -$212K TT3).

FY09 - Realignment in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (+$97,136K TB3). Establish separate project to develop new test and evaluation methodologies and testing capabilities (+$26,377K TE3). Other fund adjustments and realignments (-$54,401K CB3; +$1,723K TB3; -$3,130K TC3; +$622K TR3; -$190K TT3).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	105134	113081	20662	21028	21935	14241	14310	13823	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD): This project demonstrates technology advancements for joint service application in the areas of chemical and biological agent detection and identification, decontamination, modeling and simulation, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. This project funds science and technology to advance technology development. Beginning in 2007, the group heading for Modeling and Simulation/Battle Space Management was changed to Information Systems Technologies to be compatible with JPEO-CBD Joint Program Manager - Information Systems. Projects under CB3 Test and Evaluation will be reported under TE3 for fiscal years 2008 and beyond.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	45329	34837	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Novel Sample Concentration Technologies for Contaminant Detection in Drinking Water - Conducted research to determine water purification units performance in the removal of high threat CBRN agents and Toxic Industrial Chemicals (TICs).	991	0	0	0
FY 06 - Notre Dame Center for Environmental Networked Embedded Sensor Technology (ND-CENEST) - Developed and demonstrated an embedded network for detecting, tracking, and remediating toxic chemical and biological agents released into ground, water, and/or air.	1981	0	0	0
FY 06 - Personnel Decontamination Using Liquid Technology - Developed and evaluated design concepts for a skin decontamination product that exhibits increased efficacy against chemical agents.	1783	0	0	0
FY 06 - Reactive Air Purification for Individual and Collective Protection - Developed a universal enhanced filtration medium to be included in different IP and CP end-use applications.	5545	0	0	0
FY 06 - Hand-Held Biological Agent Detection (HBAD) System - Developed an optically based sensors for the use as handheld systems for the detection of biological materials.	2971	0	0	0
FY 06 - Industry-Based Research to Miniaturize Chemical and Biological Detectors - Continued development of new production methods for solid state components used in the sensor systems.	2105	0	0	0
FY 06 - Advanced Engineering Enzyme Decontamination Systems - Developed enzyme decontamination systems for a broad range of chemical biological warfare agents. Screened and evaluated existing enzymes and bio-engineering enzyme to provide improved decontaminants.	1981	0	0	0
FY 06 - LISA-JCSD Solid-State Laser Technology - Developed a solid-state replacement for the Excimer gas laser currently in the Joint Contaminated Surface Detector (JCSD).	991	0	0	0
FY 06 - Cooperative Unmanned Ground and Aerial Vehicle Incubator - Administered Phase 2 for the National Testbed for Safety, Security and Rescue Technologies (NT-SSRT). Project executed in TT3.	20	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
FY 06 - Hackensack University Medical Center Chemical Biological Defense Program Initiative Fund - Administered the development of a mobile, forward deployable, medical capacity that would respond to bio-terrorist incidents and other mass casualty incidents resulting from WMD, natural and technological disasters. Project executed in TT3.	24	0	0	0
Self-Detoxifying Materials in CB Clothing - FY 06 - Demonstrated the concept of producing multi-functional materials comprised of specially-formulated combinations of reactive nanoparticulates and activated carbon that provide CB protection thru a synergistic effect of an adsorptive/reactive technology. FY 07 - Refine concepts of producing multi-functional materials comprised of specially-formulated combinations of reactive nanoparticulates and activated carbon that provide CB protection thru a synergistic effect of an adsorptive/reactive technology.	2080	1288	0	0
Portable Rapid Bacterial Warfare Detection Unit - FY 06 - Conducted collaborative research and development to optimize a standardized process for real-time detection and identification of Bacterial Warfare Agents (BWA) and developed a field deployable system. FY 07 - Enhance the process for real-time detection and identification of BWA and developed a field deployable system.	991	1486	0	0
Hand-Held Biosensor and Continuous Monitor for Biodetection - FY 06 -Developed optically based sensors for the use as handheld systems for the detection of biological materials. FY 07 - Increase efforts to advanced optically based sensors for use as handheld technology.	3367	1436	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Chemical Biological Defense Program Initiative Fund - FY 06 - Solicited and awarded contracts for proposals from degree-granting universities, nonprofit organizations, or commercial concerns to include small businesses, in support of the Chemical and Biological Defense Program (CBDP) to fund chemical and biological defense science and technology projects across a wide-range of military operations. FY 07 - Initiate solicitation for proposals from degree-granting universities, nonprofit organizations, or commercial concerns to include small businesses, in support of the CBDP to fund chemical and biological defense science and technology projects across a wide-range of military operations.	6931	9902	0	0
Immunological Biological/Chemical Agent Detector - FY 06 - Developed a multiplex, micro-array system based on both antibodies and nucleic acid type. FY 07 - Improve development of the multiplex, micro-array system.	2377	991	0	0
Removal of NBC Agents in Drinking Water - FY 06 - Continued to analyze, test and develop prototype CBRN removal technologies for use in-line with existing water purification units, and conducted research to determine water purification units performance in the removal of high threat CBRN agents. FY 07 - Improve development of the water purification units.	2773	1288	0	0
Small Accelerators and Detection Systems - FY 06 - Continued development of technology for the detection and neutralization of chemical and biological threats with small accelerator/detection systems. FY 07 - Improve the detection and neutralization of chemical and biological threats with small accelerator/detection systems.	1486	1981	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
NIDS Hand-Held Biological Detectors - FY 06 - Developed and demonstrated components of the concept system that included a multiplexed lateral flow immunoassays, a handheld reader and a pathogen concentration system. FY 07 - Advance the handheld reader and a pathogen concentration system.	5941	2872	0	0
Rapid Response Database Systems - FY 06 - Continued development of a Research Demonstration Center and a Portable Training and Demonstration Center that will present first responders and their managers with real-time status reports of data collected from hospitals, schools, doctors, pharmacies and veterinary offices that could support a response to a bio-terrorist attack or other hazard. FY 07 - Advance development of a Research Demonstration Center and a Portable Training and Demonstration Center that will present first responders and their managers with real-time status reports of data collected from hospitals, schools, doctors, pharmacies and veterinary offices that could support a response to a bio-terrorist attack or other hazard.	991	1090	0	0
FY 07 - Reactive Coatings Enhanced to Resist Chemical and Biological Contamination.	0	991	0	0
FY 07 - Carbon Nanotube Bio-Chem Detector.	0	1090	0	0
FY 07 - Chem-Bio Preparedness Center.	0	1981	0	0
FY 07 - Chemical/Biological Defense Program Advanced Development.	0	1832	0	0
FY 07 - Liquid Crystal Sensor Technology Research and Development for Force Protection.	0	991	0	0
FY 07 - Modular Chemical and Biological Detection System.	0	991	0	0
FY 07 - Next Generation Threat Detection.	0	1159	0	0
FY 07 - Protective Self-Decontaminating Surfaces.	0	1486	0	0
FY 07 - Rapid Response Sensor Networking for Multiple DoD Applications Phase 3.	0	991	0	0
FY 07 - Engineered Biological Detectors for Biological Warfare.	0	991	0	0
Total	**45329**	**34837**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

	FY 2006	FY 2007	FY 2008	FY 2009
Information Systems Technology	5582	10003	3816	3837

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Information Systems Technology, CBDP Decision Capability - FY 06 - Designed and developed a common graphic user interface (GUI) for the CB Simulation Suite. Developed data and documents for independent verification and initiated verification activities. FY 07 - Complete the independent verification of the CB Simulation Suite. Conduct demonstrations and exercises in targeted user communities. Prepare to transition capability to the Joint Operational Effects Federation (JOEF) program. Initiate medical modeling area of research. Transition NATO's Allied Medical Publication 8 (AMedP-8) chemical and biological models from Nuclear Biological Chemical Casualty and Resource Estimation Support Tool (NBC CREST) to JOEF. Verify NBC CREST 5.0 for utilization by JPM-IS. FY 08 - Transition TIC/TIM and AMedP-8 nuclear models from NBC CREST to JOEF. Transition long-term radiological effects models to JOEF; provide Verification Validation (V&V) documentation for all transitioned CBRN human response models. Develop a biological and a chemical agent human response model accounting for particle size distribution (PSD) effects; develop, implement and test additional agent response models accounting for PSD effects; deliver V&V software. Validate models for predicting effects due to infectious/contagious diseases for JEM with real-world and simulation data. FY 09 - Verify and incorporate models for casualty estimates for infectious/contagious diseases into JEM.	900	1467	880	821
Information Systems Technology, Chemical and Biological Warfare Effects on Operations -	837	2660	881	821

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Conducted a current capability demonstration of sensor siting around a selected DoD facility. Conducted a data model study and initiated the web-services component of the IMPACT model framework. Demonstrated automated CBRN data import/export tool for use with the JOEF prototype. FY 07 - Test and verify the Simulated Training and Analysis for Fixed Facilities/Sites (STAFFS) and contamination model linkages. Conduct a simulation and analysis of the Chemical-Improvised Explosive Device (C-IED) model. Enhance the rapid mission impact assessment tool software and test on additional missions. Execute final implementation of the web-services interface and data model of the IMPACT framework. Conduct Verification Validation and Accreditation (VV&A) and develop documentation for CB System Military Worth Assessment Toolkit. FY 08 - Transition internal modeling capability for STAFFS to JOEF. Provide technical documentation, interface specifications, tech transition of the Chemical-Improvised Explosive Device (C-IED) model. Execute final implementation of the web-services interface and data model of the IMPACT framework. Demonstrate and beta test the next generation model of CB effects on military operations. Optimize execution speed, perform additional testing, and add mobile forces readiness assessment to Rapid Mission Impact Assessment Tool. FY 09 - Transition next generation model of CB Effects on military operations to JOEF. Transition Rapid Mission Impact Assessment Tool to JOEF. Deliver final CBRN in tactical and theatre level simulation capability. Deliver final methodology for Improving CBRN situation awareness to JOEF. Validate and refine decision support for logistics response to CBR Attacks.	837	2660	881	821
Information Systems Technology, Chemical and Biological Hazard Environment Prediction (DTO CB55) - FY 06 - Completed DTO CB55. Transitioned Chemical Biological Weapons - Computational Fluid Dynamics (CBW-CFX) capabilities to the Joint Effects Model (JEM) program.	600	0	0	0
Information Systems Technology, Chemical and Biological Hazard Environment Prediction -	2400	2316	881	1097

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Restructured the Realistic Urban Spread and Transport of Intrusive Contaminants (RUSTIC) model for installation of the Second-order Closure (SOC) model. Conducted a capability demonstration of sensor sites around a selected DoD facility. Improved ruggedization and testing and evaluation in the Geographic Environmental Database Information System (GEDIS) 2.0 release. Performed sensitivity and uncertainty analysis for the atmospheric chemistry of the Toxic Industrial Chemicals (TICs) database.	2400	2316	881	1097
FY 07 - Transition improved meteorological modeling capabilities including boundary layer modeling of surface heat fluxes over land and water into operational models. Include additional data types, tailor application support and canopy parameterizations in the GEDIS 2.1 release. Conduct lab-scale validation of TICs chemistry model. Develop methodology for TIC source emission improvements. Initiate development of improved climatological, terrain, land use, and population data sets. Develop advanced numerical weather prediction capabilities. Initiate test and validation of initial waterborne transport capability.				
FY 08 - Complete initial interior building transport modeling algorithm and software development. Complete initial validation of FAST3D-CT and provide documentation. Initiate improved TIC/Toxic Industrial Materials (TIM) prototype integration into JEM. Provide updated mass consistency wind models and improved Transport and Dispersion models to JEM. Continue enhancement and testing in the GEDIS 2.2 release. Demonstrate prototype waterborne transport model including sedimentation effects. Integrate advanced numerical weather prediction techniques for coastal, complex terrain and urban environments.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue development of variable resolution database containing highly refined estimates of "typical" atmospheric conditions for any given location and time. Transition multi-scale four-dimensional data assimilation model to operational centers. Test and evaluate the use of Weather Research and Forecast (WRF)/Urban Canopy Model (UCM) forecasts to drive JEM transport and dispersion prediction. Perform error analysis on waterborne transport model. Transition GEDIS 2.3 to JEM. Transition fully extended Stationary Wind Fit with Turbulence (SWIFT) mass consistency wind model to JEM. Validate and verify building interior dispersion model.	2400	2316	881	1097
Information Systems Technology, Battle Space Management - FY 06 - Enhanced enterprise level definition, developed, released and transitioned fully developed Rapid Planning Mode (RPM) capability. Provided integrated demonstration and assessed user feedback on the Common Operating Picture (COP) for HLS and HLD. Demonstrated the Inter-LAN socket connection manager in a simulated environment. Conducted live real-time demonstration of Joint Warning and Reporting Network (JWARN) Component Interface Device (JCID) compliance on examples of fielded JWARN sensors. Produced final report, user manual and prepared to transition JCID compliant thin server technology. Field-tested the intelligent agent decision design for next generation CB battle management. Initiate the transition of the Integrated Information Management System (IIMS) to JOEF. FY 07 - Demonstrate increased maturity and readiness of the Inter-LAN socket connection manager for transition to the JWARN program. Incorporate warfighter feedback and transition the next generation CB battle management capability. Complete development, implement, test and transition the sensor alert verification for incident operational response capability. Develop an initial prototype of a software-based, user configurable, CBRNE sensor supporting the ability to dynamically configure/load the protocols/messages sets required for a particular configuration and support a subset of the features/functionality of the JCID specification (JCID on a Chip). Complete the transition of IIMS to JOEF by converting selected components to web services. Transition Automated Rules-Base Placement Tool to JOEF.	845	2860	881	549

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Transition Inter-LAN socket connection manager to the JWARN program. Transition JCID on a Chip, a software-defined sensor that is hardware independent and can support the ability to load to key supported hardware sensor system technologies. FY 09 - Transition the exchange and multi-level fusion of actionable information with real world C2 systems in DOD, Coalition and Homeland Security and Homeland Defense (HLS/HLD) domains to JWARN.	845	2860	881	549
Information Systems Technology, Sensor Data Fusion - FY 07 - Demonstrate a rapidly relocatable stand-alone sensor placement tool in realistic biological background. Initiate prototype sensor placement tool for optimal hazard prediction. Initiate software development for building interior sensor data fusion applications. Provide technical documentation of delivered software applications. FY 08 - Deliver networked sensor placement tool. Continue prototype sensor placement tool development for optimal hazard prediction. Deliver software for prototype building interior sensor data fusion applications. Provide technical documentation of delivered software applications. Develop and demonstrate a second generation sensor siting tool and demonstrate. FY 09 - Transition second generation siting tool and building interior sensor data fusion software to JEM.	0	700	293	549
Total	**5582**	**10003**	**3816**	**3837**

	FY 2006	FY 2007	FY 2008	FY 2009
Technology Transition	6193	4981	4866	4886

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Technology Transition - FY 06 - Initiated transition of Defense Advanced Research Projects Agency (DARPA) Semiconductor UV Optical Sources (SUVOS) technology to produce a low-cost biological aerosol detection system in collaboration between DHS and the CBDP. The technology will provide an early warning capability to be demonstrated in an Advanced Technology Demonstration in FY 2008 to meet the requirements of the Joint Biological Tactical Detection System (JBTDS) and the DHS Low-cost Biological Aerosol Detection System (LBADS). Initiated a competitive assessment of all mature technology from outside of the CBDP for rapid technology insertion into the capability areas. FY 07 - Continue transition of DHS LBADS and DARPA SUVOS into core CBD program thru laboratory testing to meet DoD need. Expand efforts to leverage technologies from to other government agencies and non-government agencies into the CBDP. Continue competitive assessment of mature technologies. Candidate projects include: DARPA Solid-state Eye-safe Aerosol LIDAR (SEAL), Immune Building (multiple protection technologies), and Nanofiber aerosol filtration. FY 08 - Complete transition DHS LBADS to JBTDS. Continue competitive assessment of all mature technology from outside of the CBDP for rapid technology insertion into the capability areas. FY 09 - Continue competitive assessment of all mature technology from outside of the CBDP for rapid technology insertion into the capability areas.	6193	4981	4866	4886
Total	**6193**	**4981**	**4866**	**4886**

	FY 2006	FY 2007	FY 2008	FY 2009
Decontamination	1880	4132	2162	1963

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Decontamination, Solutions Chemistry - FY 06 - Developed and selected peracetate solvent peroxide-based decontaminants with proper transport, storage, and efficacy and recommended transition to the developmental program to support Joint Portable Decontamination System (JPDS) and Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS); and initiated new research on transportation, storage, and use of hydrogen peroxide for decontamination to support JPDS and Joint Platform Interior Decontamination (JPID). FY 07 - Complete development of reactive impregnated solvent-based wiping system and transition to Joint Material Decontamination System (JMDS) complete research on transportation, storage, and use of hydrogen peroxide for decontamination and transition to JPID and Joint Service Sensitive Equipment Decontamination (JSSED). Complete research on technologies to develop hydrogen peroxide at their point of use.	1155	1150	0	0
Decontamination, Solid Phase - FY 06 - Completed laboratory scale (large panel) testing of solid sorbent based on nanocrystalline metal oxides to support the JSTDS-SS. FY 07 - Complete testing to provide chamber scale studies to assess the impact of applicator process and procedures on solid sorbents based on nanocrystalline metal oxides to support the JSTDS-LS. FY 08 - Complete research efforts to develop reactive sorbent nano-active suspensions and sprayable powders and transition to JSTDS-LS.	725	1680	1071	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Decontamination, Alternative Processes - FY 07 - Continue research initiated in FY 06 BA2 to develop a gaseous chemical and biological decontamination system combining hot air and modified vaporous hydrogen peroxide, determine efficacy effects on decontamination of chemical and biological agents, and determine candidate formulation and application combinations to support JPID. FY 08 - Complete research to develop a gaseous chemical and biological decontamination system combining hot air and modified vaporous hydrogen peroxide, determine efficacy effects on decontamination of chemical and biological agents, and determine candidate formulation and application combinations and transition to JPID. Initiate efforts to investigate reactive materials and Nanotechnology for decontamination processes and transfer efforts under Protection capability area. FY 09 - Continue efforts to investigate reactive materials and nanotechnology for decontamination processes and transfer efforts under Protection capability area.	0	830	1091	1963
Decontamination, Process Fundamentals - FY 07 - Develop a process to comply with regulatory requirements for Environmental Protection Agency (EPA) registration of all DoD decontaminants by identifying a method that satisfies DoD requirements for bio-efficacy testing as well as satisfying EPA registration data requirements to streamline the approval process and save test dollars.	0	472	0	0
Total	**1880**	**4132**	**2162**	**1963**

	FY 2006	FY 2007	FY 2008	FY 2009
Detection	21161	20758	6898	7411

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Detection Capabilities for Non-Traditional Agents - FY 06 - Initiated the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agent focusing on biological materials followed by chemical materials. Completed and demonstrated the Hot-LCD prototype for NTAs with reduced power consumption. FY 07 - Continue the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agents focusing on biological materials followed by chemical materials. Initiate trade-studies on impact of Hot-LCD modifications on detection enhancements to detect NTAs to the manufacturing process of the standard LCD. FY 08 - Complete impact studies to incorporate Hot-LCD modifications to standard LCD design and transition recommendations to the Joint Chemical Agent Detector (JCAD) program. Complete the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agents. Complete the development of agent to simulant correlations in support of T&E needs.	3520	3870	898	0
Detection, Chemical Stand-off Technology - FY 06 - Initiated the development of test methodology to evaluate and assess the value of new signatures to reduce the false alarm rate and to increase the detection range. Initiated novel algorithm development to better match the capabilities of existing hardware to optimize performance of systems from the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD). Complete the development of test methodology and continue the evaluation and assessment the value of new signatures to reduce the false alarm rate and to increase the detection range. Complete the algorithm development for enhanced sensitivity and selectivity for JSLSCAD. FY 07 - Efforts for algorithm and new signature development were reprogrammed to BA2 because FY 2006 efforts proved technology to be immature.	1160	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Detection, Lightweight Integrated CB Detection (DTO CB50) - FY 06 - Assessed the ability of technology to meet Joint Biological Tactical Detection System (JBTDS) requirements and as a technology insertion to the Joint Biological Point Detection System (JBPDS) and Reconnaissance Systems as spiral enhancements/replacement for the biological trigger systems. The technology will also meet the need to detect/identify chemical aerosols. Initiated fabrication of brassboards. Developed a UV fluorescence detector that exploits Semiconductor Ultra Violet Optical Sources (SUVOS) developed by DARPA as a competing technology for JBTDS. FY 07 - Demonstrate the technology and transition for technology insertion into JBPDS and Reconnaissance Systems as enhancements/replacement for the biological trigger systems to detect/identify chemical aerosols. Complete fabrication, and test and evaluation of brassboards. Complete DTO and transition to JBPDS and JBTDS.	7263	5231	0	0
Point Detection, Biological Identification - FY 06 - Completed and transitioned into a micro-array system for high throughput laboratory biological detection/identification. Demonstrated the prototype for an antibody multiplex assays system for JBPDS technology insertion and Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM) Increment 1. FY 09 - Initiate prototype design and fabrication for portable whole genome sequencing of pathogens for JCBRAWM Increment 2 based on applied research in BA2 FY 2007 and FY 2008.	3058	0	0	1411

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Detection, Biological Stand-off Technology - FY 06 - Initiated the development of test methodology to evaluate and assess the value of new signatures in broad regions of the electromagnetic spectrum. FY 07 - Continue the development of test methodology to evaluate and assess the value of new signatures in broad regions of the electromagnetic spectrum. Assess and evaluate the IR data from DTO CB35 and initiate prototype designs based upon this new information to enhance selectivity for interference rejection. FY 08 - Complete the development of test methodology to evaluate and assess the value of new signatures in broad regions of the electromagnetic spectrum. Complete prototype designs and initiate fabrication based upon this new information to enhance selectivity for interference rejection. FY 09 - Complete the fabrication, conduct a demonstration and transition technology to meet Joint Biological Standoff Detection System (JBSDS) Increment 2 technology based upon the new information in the IR electromagnetic spectrum from DTO CB35 to enhance selectivity for interference rejection.	1310	7521	6000	6000
Detection, Chemical/Biological Agent Water Monitor (DTO CB37) - FY 06 - Demonstrated and conducted a Milestone A at the end of FY06 on the system requirements. Completed and transitioned the toxin portion to meet Increment 1 requirements. Completed feasibility studies and transitioned data on the detection needs of all pathogens to meet Increment 1 requirements. Completed DTO and transitioned results to the JCBRAWM.	3600	0	0	0
Detection, System Performance Modeling -	1250	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Completed the database development of infrared spectral backgrounds. Conducted and finalized an analytical feasibility study to determine the minimal performance parameters needed for a standoff biological detection system for on-the-move capability for a mobile platform like the Stryker vehicle program. Completed the system model for Information Management Systems detection system to project overall performance in various environments.	1250	0	0	0
Detection, Chemical/Biological Agent Water Monitor - FY 07 - Develop a preconcentration system for chemical and biological materials to meet detection sensitivity requirements and transition JCBRAWM Increment 2.	0	4136	0	0
Total	**21161**	**20758**	**6898**	**7411**

	FY 2006	FY 2007	FY 2008	FY 2009
Protection	6723	8673	2920	2931

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Protection, Advanced Air Purification Systems Model (DTO CB61) - FY 06 - Initiated assessment of advanced Commercial off-the-shelf (COTS) and developmental air purification systems. Measured laboratory scale design and platform application integration data to evaluate these configurations. Designed advanced air purification system configuration for one platform application. FY 07 - Fabricate system demonstrators. Test and validate the advanced air purification system model, then optimize for design concepts. Complete test and validation of Advanced Air Purification System Model. Complete and transition advanced air purification system model to Collective Protection (COLPRO) overarching model.	2278	2859	0	0
Protection, Shelter Systems -	991	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Analyzed COLPRO Technology Readiness Evaluation (TRE) results and identified and documented critical sub-system components and interface/integration issues requiring S&T. Acquired sub-system demo components, addressed interface/integration issues, assembled and tested sub-system. Down-selected and fabricated prototypes from sub-systems. Conducted physical performance testing on prototypes integrated as full COLPRO systems. Results of these test identified technology gaps will be addressed under BA2 COLPRO System Integration in FY 2008.	991	0	0	0
Protection, Self-Detoxifying Materials for CB Protective Clothing (DTO CB45) - FY 06 - Manufactured prototype garments containing reactive nanoparticles. Measured chemical/aerosol breakthrough of garments. Conducted field-testing. Collected user assessments. Conducted chemical warfare agent (CWA) simulant and live CWA testing on worn garments to assess durability. FY 07 - Optimize garment designs. Manufacture optimized prototype garments containing optimized reactive nanoparticle-loaded fabrics. Measure chemical/aerosol breakthrough of optimized garments. Conduct field-testing and assessments. Down-select candidates. Identify technology gaps that will be addressed under BA2 Individual Protection, Integrated Protective Fabrics in FY 2008. Complete DTO and transition technologies to support future protective ensembles.	1600	2100	0	0
Protection, Shelter Systems and CCA/Airlock/Toxic Free Area (CCA/A/TFA) - FY 07 - Fabricate shelters using novel materials, enhanced closures, and novel ingress/egress systems and initiate assessment. Fabricate a prototype general-purpose shelter using improved textiles such as PVC/Tevlar/Polyester fabric and conduct a systems simulant test. Fabricate CCA/A/TFA prototypes and test (simulant). Conduct shelter system tech demo/testing. Results of these test identified technology gaps will be addressed under BA2 COLPRO System Integration in FY 2008.	0	2014	0	0
Protection, Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating - FY 06 - Demonstrated Expedient COLPRO Coatings proof-of-concept for tentage applications.	857	550	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Apply expedient and reactive coatings to current general-purpose tent fabric as after-treatment and test. Transition test results to advance development.	857	550	0	0
Protection, Regenerative and Reactive Air Purification - FY 06 - Demonstrated catalytic-based air purification applications by incorporation of commercial or newly developed catalysts for chemical, biological and TICs destruction. Developed a breadboard system with optimized catalyst, post treatment filter, and thermal management. Transitioned technology specifications to advance development.	598	0	0	0
Protection, Improved Single-Pass Filters - FY 06 - Optimized polishing sorbent material and measured design data for CWA/TIC. Integrated ammonia filtration material into current filters. Demonstrated polishing sorbent for collective protection (CP) filters (M98) and transitioned to Joint Program Manager (JPM), COLPRO. Integrated Residual Life Indicator system with COLPRO filter/blower system and performed validation testing. Demonstrated candidate residual life indicators in operational filtration systems. FY 07 - Develop a Residual Life Indicator (RLI) prototype capable of determining the integrity, physical adsorption capacity and reaction capacity of in-service CBRN filters. Complete tracer evaluation for filter assessment of chemical reactivity capacity with chemical pulse testing and correlation development. Demonstrate subsystem hardware in current CBRN filter providing capability for determining the residual life of filter. Transition technology specifications to advance development.	399	1150	0	0
Protection, Regenerative and Reactive Air Purification - FY 08 - Complete evaluation of the electro thermal swing adsorption (ESA) prototype. Transition ESA technology to the Joint Expeditionary Collective Protection (JECP) system.	0	0	950	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Individual Protection, Respiratory/Ocular Protection - FY 08 - Continue integration of the protective mask designs from BA2 efforts with developmental helmet systems to provide seamless compatibility of CB protection with ballistic protection, and integration of communication and optical systems. Initiate development of initial high fidelity prototypes for early assessment of human and operational compatibility. FY 09 - Continue integration of the protective mask designs with developmental helmet systems to provide seamless compatibility of CB protection with ballistic protection, and integration of communication and optical systems. Continue to develop initial high fidelity prototypes for early assessment of human and operational compatibility.	0	0	1050	1450
Protection, Integrated Ensemble Development - FY 08 - Initiate systems integration of a complete CB ensemble. Incorporate emerging designs and prototype concepts from Integrated Protective Fabric, Respiratory/Ocular Protection, and Air Purification projects. Incorporate emerging comfort and performance models in determining trade space. Conduct market surveys. Develop initial concepts for an integrated ensemble that will transition to the Joint Chemical Ensemble (JCE). FY 09 - Continue systems integration of a complete CB ensemble. Incorporate emerging designs and prototype concepts from Integrated Protective Fabric, Respiratory/Ocular Protection, and Air Purification projects. Incorporate emerging comfort and performance models in determining trade space. Refine concepts for an integrated ensemble that will transition to the Joint Chemical Ensemble (JCE). Initiate field trails in a relevant environment.	0	0	920	1481
Total	**6723**	**8673**	**2920**	**2931**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

	FY 2006	FY 2007	FY 2008	FY 2009
Test and Evaluation (T&E)	18266	28580	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Test & Evaluation, Detection - FY 06 - Continued the development of agent to simulant correlations in support of T&E needs. Initiated the following methodology and capability projects; Measurement of Natural Interferent Transients (MONITR), critical reagent program antigen variability research, range test validation system, chemical detector testing with Non-Traditional Agents (NTAs) in the McNamera Glove Box Facility. Initiated optical acceptance measurements for T&E antigens. FY 07 - Continue the development of agent to simulant correlations in support of T&E needs. Continue Measurement of Natural Interferent Transients (MONITR), critical reagent program antigen variability research, range test validation system, chemical detector testing with NTAs in the McNamera Glove Box Facility. Initiated optical acceptance measurements for T&E antigens. Efforts transition to TE3 in FY 2008.	5029	8011	0	0
Test & Evaluation, Threat Area Science - FY 06 - Initiated and completed the following methodology and capability projects; Aerosol Cloud Production and Droplet Delivery technology Protocol, Engineered Aerosol Production for Laboratory-Scale Chemical and Biological Test and Evaluation. FY 07 - Develop simulant tests and evaluation methods and procedures for non-vapor threats, e.g., aerosols, rains, and other emerging threats. Efforts transition to Project TE3 in FY 08.	1406	938	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Test & Evaluation, Modeling and Simulation Battle Space Management - FY 06 - Initiated the following methodology and capability projects; Overarching Collective Protection (COLPRO Model), CREATIVE decontamination efficacy prediction model, and overarching contamination avoidance model. FY 07 - Construct prototype model, leverage legacy models, commence validation, verify model via test data, prepare validation reports, and acquired accreditation for the Overarching Collective Protection (COLPRO Model). Continue developing methodology and capability of the CREATIVE decontamination efficacy prediction model and the overarching contamination avoidance model. Initiate overarching model individual protective equipment. Efforts transition to Project TE3 in FY 08.	2315	5319	0	0
Test & Evaluation, Protection - FY 06 - Developed pressure suit concepts and conducted initial test and evaluation for use in assessing field operations effects on garments for IPE field operations effects standard. Developed standardized collective protection (COLPRO) shelter systems protective test and evaluation standards - Developed conceptual biological test operating procedures. Drafted initial procedures and protocol for chemical, biological, and aerosol testing of collective protection systems. Initiated test methodology IP systems/MIST aerosol, COLPRO component and whole systems for the TIC/battlefield contaminant set standard for IPE and COLPRO. Initiated model to predict airflow within the ensemble, and developed test apparatus to validate the IPE Airflow Mapping model. Developed concepts for filtration and air purification system test method development. Initiated development of test apparatus for the conduct of evolving test methods. Initiated development of real-time sampling/detector system swatch for use in Chemical and Biological Agent Resistance Test System (CBART) and system for use in Man-in-Simulant Test System. Initiated protocol development for Protective Ensemble Test System.	6950	8312	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Continue development of standardize collective protection shelter systems test and evaluation standards, TIC/battlefield contaminant set standards for IPE and COLPRO, real-time sampling/detector system swatch for use in Chemical and Biological Agent Resistance Test System (CBARTS), Standardize Procedure for IPE Assessment, test methodology standards and guidance for air purification technologies, IPE field operations effect standard, and IPE air flow mapping. Efforts transition to Project TE3 in FY 2008.	6950	8312	0	0
Test & Evaluation, Decontamination - FY 06 - Initiated the following methodology and capability projects; decontamination hazard byproduct and residual agent test standards and achieving low-level detection of residual agent and reaction products. FY 07 - Continue decontamination hazard byproduct and residual agent test standards and achieving low-level detection of residual agent and reaction products. Initiated test and evaluation methodology and method development for decontamination facility equipment for Dugway Proving Ground (DPG). Efforts transition to Project TE3 in FY 2008.	2566	6000	0	0
Total	**18266**	**28580**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	1117	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	1117	0	0
Total	**0**	**1117**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
CB3

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CA4 CONTAMINATION AVOIDANCE (ACD&P)	14650	4996	3125	3165	23047	19905	16559	20881	Cont	Cont
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	21960	0	0	0	0	0	0	0	0	21960
DE4 DECONTAMINATION SYSTEMS (ACD&P)	989	1000	3093	7662	0	0	0	0	0	12744

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	87910	89678	146539	299581	229306	129419	122230	113827	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB3 MEDICAL BIOLOGICAL DEFENSE (ATD): This project area funds preclinical development of safe and effective prophylaxes and therapies (vaccines and drugs) for pre- and post-exposures to biological threat agents. This project also supports the advanced technology development of diagnostic devices to rapidly diagnose exposure to biological agents in clinical samples. A broad range of technologies involved in the targeting and delivery of prophylactic and therapeutic medical countermeasures and diagnostic systems are evaluated in order to identify the most effective medical countermeasures against biothreats. Entry of candidate vaccines, therapeutics, and diagnostic technologies into development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) licensure processes and DoD acquisition regulations and (as applicable) the oversight of Phase 1 clinical trials in accordance with FDA guidelines. Categories for this project area include core science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics) and directed research areas such the Defense Technology Objectives (DTO), efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA) and the Transformational Medical Technologies Initiative (TMTI). The TMTI was launched in FY06 as a key Quadrennial Defense Review initiative to respond to the threat of emerging or intentionally bioengineered biological threats. It augments the core science and technology area by expanding the novel programs currently funded under the core Therapeutics program and introducing new technologies for developmental focus. The TMTI is a novel experiment to develop drugs that are broad spectrum in nature by using non-traditional and high risk approaches to accelerate the development and licensure of new medicines. The TMTI supports advanced technology development efforts for maturing medical countermeasures effective against intracellular pathogens and hemorrhagic fever viruses. Teaming the core program and TMTI provides a complementary strategy (single agent versus broad spectrum, conventional versus emerging threats and established model systems versus expanded integration of novel technology, respectively) towards the development of effective medical countermeasures against biothreat agents.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	24810	10322	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - UCLA High Speed, High Volume Laboratory Network for Infectious Diseases - Developed of a new high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions.	5942	0	0	0
FY 06 - Ebola Countermeasures - Determined if it is feasible to use Phosphorodiamidate Morpholino Oligomers (PMO) to treat Ebola virus infections. The PMOs will be used to interfere with the expression of host genes involved in adaptive immunity.	2971	0	0	0
FY 06 - Polyclonal Human Antibody Productions System - Produced polyclonal antibodies in transgenic cows by evaluating new methods and technologies for downstream purification and viral clearance.	2080	0	0	0
FY 06 - Heteropolymer Anthrax Monoclonal Antibody - Developed the cell line and production activity to support the commercial manufacturing of Anthim, a high-affinity monoclonal antibody that targets the protective antigen (PA) component of anthrax, blocking the bacteria's ability to form deadly toxins.	991	0	0	0
FY 06 - Dengue Countermeasures - Determined if Phosphorodiamidate Morpholino Oligomers (PMO) that have been proven to be effective against Dengue virus in vitro and in a mouse model, can be used as a therapeutic against Dengue virus in the nonhuman primate.	2971	0	0	0
FY 06 - Clinical Treatment for Sulfur Mustard Agent Burns - Investigated the effectiveness of ilomastat in animal models of skin and eye exposure to Sulfur Mustard.	991	0	0	0
FY 06 - Outbreak Detection Information Network (ODIN).	1981	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
FY 06 - Oral Adjuvants - Developed adjuvants that enhance natural resistance and adaptive immune responses against mucosal pathogens.	1387	0	0	0
Anthrax Monoclonal Antibody Therapeutic and Prophylaxis Program - FY 06 - Used a monoclonal antibody to attempt to improve survival for anthrax exposure. FY 07 - Refine the use of a monoclonal antibody to attempt to improve survival for anthrax exposure.	2030	991	0	0
Plant Vaccine Development - FY 06 - Developed safe and efficacious oral multi-agent vaccines from plant-based anthrax and plaque platforms and developed an immediate therapeutic treatment against Biological Warfare (BW) agent epidemics. FY 07 - Refine the development of safe and efficacious oral multi-agent vaccines from plant-based anthrax and plaque platforms and developed an immediate therapeutic treatment against BW agent epidemics.	3466	3120	0	0
FY 07 - Anthrax and A. Baumanii Research.	0	991	0	0
FY 07 - Bioterrorism Preparedness.	0	1159	0	0
FY 07 - Novel Viral Biowarfare Agent ID and Treatment (NOVBAIT) - Conduct development of a novel approach to anti-viral therapeutics based on high-throughput screening of compounds against intermediates of the virus capsid assembly pathway.	0	2971	0	0
FY 07 - Rapid Response Therapeutic Platform for Biodefense.	0	1090	0	0
Total	**24810**	**10322**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
Transitional Medical Technology Initiative	29096	41443	111739	264946

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Multiagent (Broad Spectrum) Medical Countermeasures - FY 06 - Initiated efforts to evaluate therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways identified from basic research efforts. Initiated design of platforms for discovery, development and manufacturing technologies that allow the rapid incorporation of medical countermeasure technologies into robust and very rapid process development and manufacturing scale-up systems. FY 07 - Expand drug discovery efforts such as antisense RNA technology that target common bacterial virulence or house-keeping genes (pathogenicity islands, quorum-sensing molecules, siderophores, etc.). Evaluate additional therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways identified from basic research efforts. Develop transgenic animal models or alternate animal model systems to better replicate the human-pathodeme, common virulence, and response pathways. Test platforms for discovery, development and manufacturing technologies that allow the rapid incorporation of medical countermeasure technologies into robust and very rapid process development and manufacturing scale-up systems. Develop platform manufacturing technologies that enable rapid regulatory approval and rapid clinical development. Identify potential Investigational New Drug (IND) candidate drugs for development. Initiate candidate drug development phase.	29096	41443	111739	264946

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 08 - Apply drug discovery efforts such as antisense RNA technology that target common bacterial virulence or house-keeping genes (pathogenicity islands, quorum-sensing molecules, siderophores, etc.). Pursue additional therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways identified from basic research efforts. Validate transgenic animal models or alternate animal model systems to better replicate the human-pathodeme, common virulence, and response pathways. Continue to test platforms for discovery, development and manufacturing technologies that allow the rapid incorporation of medical countermeasure technologies into robust and very rapid process development and manufacturing scale-up systems. Accelerate platform manufacturing technologies that enable rapid regulatory approval and rapid clinical development. Continue to identify potential IND candidate drugs for development. File two applications for an IND with the Food and Drug Administration (FDA). Initiate pre-clinical phase. Initiate studies necessary to support an IND application and a Milestone A decision. FY 09 - Accelerate drug discovery efforts, incorporating new technology breakthroughs. Advance therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways. Utilize transgenic animal models or alternate animal model systems to replicate the human-pathodeme, common virulence, and response pathways. Pursue test platforms for discovery, development and manufacturing technologies that allow the rapid incorporation of medical countermeasure technologies into robust and very rapid process development and manufacturing scale-up systems. Continue to accelerate platform manufacturing technologies that enable rapid regulatory approval and rapid clinical development. File two to four applications for an IND with the FDA. Initiate clinical phase. Initiate a Phase 1 clinical trial and studies necessary to support a Milestone B decision.	29096	41443	111739	264946
Total	**29096**	**41443**	**111739**	**264946**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	5751	6014	7322	9051

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies - FY 06 - Developed additional multiplexed nucleic acid assays, focusing on the orthopox viruses. Improved the sensitivity and specificity of existing assays, developing assays for new targets and new threats, as genomic data and techniques become available. Provided test and evaluation support for the Joint Biological Agent Identification and Diagnostic System (JBAIDS) Block I assays upcoming for Food and Drug Administration (FDA) approval. Continued to augment field studies of assays, reagents and platforms for the diagnosis of potential Biological Warfare Agents (BWAs) with animal studies prior to transition to the Advanced Developer. Developed a more coordinated and relevant application for animal and field studies, with emphasis on better characterizing JBAIDS Block I assays. Further applied new technological approaches for processing clinical samples to complex matrices and different organisms. Initiated evaluation of a broad range pathogen detection system capable of potentially identifying genetically engineered bacterial strains. Continued to apply proteomics to the development of immunologic assays for pathogen detection. Pursued assessment of next generation diagnostic technologies and their components and explored adaptation for military use.	4051	4214	7322	9051

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Analyze data and deliver recommendations to JBAIDS Program Office on an automated DNA extraction option for Block I. Test optimal matrices/tissues for diagnostic testing identified using Service assays with JBAIDS Block I assays. Use this data, along with the results of expanded inclusivity and exclusivity testing, to augment the Advanced Developer's FDA assay submission packages. Investigate new recombinant DNA techniques for developing immunodiagnostic agents. Validate confirmatory tests for ricin and botulinum toxins. Complete study assessing the use of whole genome amplification and a microelectronic array. Validate multiplexed assays identifying RNA viruses on existing platforms. Apply a Defense Advanced Research Projects Agency (DARPA) transitioned broad range pathogen detection system capable of potentially identifying genetically engineered bacterial strains. Utilize proteomics data to develop and test immunologic assays for bioagent detection. Perform advanced testing on components and platforms for next generation diagnostic devices with an emphasis on integration of sample processing and nucleic acid and immunodiagnostic testing. FY 08 - Continue to test optimal matrices/tissues for diagnostic testing identified using Service assays with JBAIDS Block I assays. Use this data, along with the results of expanded inclusivity and exclusivity testing, to augment the Advanced Developer's FDA assay submission packages. Apply new recombinant DNA techniques for developing immunodiagnostic agents. Adapt real time Polymerase Chain Reaction (PCR) assays identifying genes responsible for antibiotic resistance in biothreat agents to applicable instrumentation. Assess enhanced sensitivity of surface amplification methods for microarray platforms. Critically analyze/apply the results of the decision matrix to developmental testing of next generation diagnostic devices with emphasis on technologies capable of integrating sample processing, nucleic acid and immunodiagnostic testing. Accelerate development and testing of next generation diagnostic devices with the goal of transitioning two candidates to the advanced developer in FY09.	4051	4214	7322	9051

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Transition two candidates for a next generation diagnostic device to the advanced developer. Continue to utilize the decision matrix to identify and evaluate new technologies more effectively diagnosing exposure to biothreat agents. Validate real time PCR assays identifying genes responsible for antibiotic resistance in biothreat agents. Perform advanced assessment on the use of recombinant DNA reagents on existing systems and improved test assays utilizing new technologies and approaches that enhance diagnosis of early exposure to biothreat agents.	4051	4214	7322	9051
Diagnostics, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - FY 06 - Delivered four new nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer with priority for JBAIDS assays. Delivered four new antigen detection assays and/or supporting reagents to the advanced developer. FY 07 - Deliver four new additional nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer with priority for JBAIDS assays. Deliver four new additional antigen detection assays and/or supporting reagents to the advanced developer. Completed DTO CB56.	1700	1800	0	0
Total	**5751**	**6014**	**7322**	**9051**

	FY 2006	FY 2007	FY 2008	FY 2009
Emerging Threats	1643	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Emerging Threats, Genetically Engineered Threats -	1643	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 06 - Conducted determination of spore germination inhibitors and their effectiveness. Transitions to Therapeutics in FY07.	1643	0	0	0
Total	**1643**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Pretreatments	10236	11844	12915	10097

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Pretreatments, Vaccine Research Support - Recombinant Ricin Vaccine (DTO CB46) - FY 06 - Completed expression and purification of ricin toxin components in a soluble, immunogenic form. Continued down-selection of vaccine candidates and non-human primates efficacy studies (surrogate marker of clinical efficacy). Pursued formulation and stability studies. Prepared technical data from completed vaccine research studies to the advanced developer for incorporation into an Investigational New Drug (IND) application. Initiated studies of the involvement of novel and current ricin vaccine candidates in vascular leak syndrome. DTO CB46 completed in FY06.	1324	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Pretreatments, Vaccine Research Support -	2621	8490	8007	7775

FY 06 - Evaluated animal studies in support of clinical trials of selected vaccine candidates against bacterial threat agents. Continued technology base studies in support of the development and eventual Food and Drug Administration (FDA) licensure of the ricin candidate vaccine. Expanded challenge studies against selected intracellular pathogen candidate vaccines and evaluated the contribution of cell-mediated immunity toward protection. Increased the evaluation of the human immune response to selected target antigens.

FY 07 - Conduct animal studies of selected vaccine candidates against bacterial threat agents. Expand challenge studies against selected intracellular pathogen candidate vaccines. Initiate optimization of new generation intracellular pathogen vaccines, considering alternative adjuvant formulations, routes of administration, and dosage schedules. Evaluate ability and characteristics of next generation Staphylococcal Enterotoxin A/Staphylococcal Enterotoxin B (SEA/SEB) immunogens as vaccine candidates to protect against multiple SE serotypes in vivo. Develop surrogate endpoints of clinical efficacy for higher animal species in ricin vaccine adjuvant studies. Pursue recombinant ricin vaccine candidate stability testing and initiate toxicity studies. Study the vascular leak peptide in novel and current ricin vaccine candidates. Evaluate the Venezuelan Equine Encephalitis (VEE) replicon-based Marburg virus vaccine platform in non-human primate efficacy studies. Study adenovirus-based and rhabdovirus-based immunization approaches for vaccination against filoviruses. Start down-selection phase of the various filovirus vaccine candidate constructs (platforms) and evaluate alternative forms of delivery for comparative evaluation of vaccine efficacy.

FY 08 - Complete non-human primate efficacy studies for toxin vaccines, such as ricin, SEB and botulinum; initiate/continue stability and toxicity studies. Initiated process for production of cGMP lots for advanced evaluation in clinical studies. Down-select filovirus vaccine candidates; continue safety and efficacy studies in non-human primates; begin duration of immunity studies; initiate stability testing. Evaluate pan-filovirus vaccines for problems of vaccine interference between components.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue safety, toxicity and duration of immunity studies in non-human primates for filovirus vaccines; optimize dose, route and/or regimen for maximum efficacy. Assess multiagent alphavirus and filovirus vaccines for issues of vaccine interference. Conduct stability and toxicity studies for lead alphavirus vaccine candidates. Complete stability and toxicity studies for toxin vaccine, such as ricin, SEB and botulinum; prepare cGMP production lots; begin IND preparation for FDA evaluation.	2621	8490	8007	7775
Pretreatments, Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - FY 06 - Continued evaluating combinations of EEE, WEE, and V3526 VEE or alternate VEE constructs (the DNA- or replicon-based vaccine platforms) in animal models. Completed evaluation of promising WEE/EEE vaccine candidates in higher animal species against EEE or WEE virus challenge. FY 07 - Finalize the evaluation of promising WEE/EEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Conduct duration of immunity studies with lead candidates for each platform, comparing the individual constructs and trivalent formulations. Evaluate results of recent clinical trial study and modify V3526 vaccine candidate. Develop NHP models of aerosol exposure to all alphaviruses. FY 08 - Complete duration of immunity studies for each platform, comparing individual constructs and trivalent formulations. Initiate studies to address issue of vaccine interference. Conclude safety and efficacy studies in animal models. Initiate down-selection process of alphavirus vaccine candidates. DTO CB58 will be completed in FY08.	2943	2978	3100	0
Pretreatments, Multiagent Vaccines (Formerly Resuscitative Intervention) - FY 06 - Evaluated various vaccine platform technologies that are amenable to multiagent immunization. Designed study of multiagent anthrax/plague/ricin recombinant protein vaccine and initiated testing in a murine model.	36	376	1808	2322

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Evaluate multiagent candidate vaccines in non-human primates model for immunogenicity and immune interference, especially adjuvant formulations/systems that enhance the efficacy of molecular vaccines. Continue evaluation and eventual down-selection of various vaccine platform technologies that are amenable to multiagent immunization. Analyze duration of immunity and protective efficacy of multiagent vaccine formulations. Pursue studies of a protein-based trivalent (anthrax/plague/ricin) vaccine. FY 08 - Determine optimum dose mixture and route of entry for protein-based trivalent vaccine and evaluate any potential antigen interference phenomena. Extend studies to a second animal model. Down-select vaccine platform technologies that are amenable to multiagent immunization. Evaluate trivalent vaccine with novel adjuvant formulations to enhance the immune response. FY 09 - Evaluate safety and efficacy of protein-based trivalent vaccine in non-human primates; complete studies of antigen interference; conduct duration of immunity studies. Optimize down-selected multiagent vaccine platform; determine dosage and route of entry and efficacy.	36	376	1808	2322
Pretreatments, Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - FY 06 - Conducted testing with animal models of aerosol infection with filoviruses. Investigated whether putative surrogate markers of protection reliably predict mitigation or prevention of disease in animals for optimal vaccine development. Continued recombinant vaccine development for filoviruses. Evaluated vaccine performance requirements (vaccine dose, route, number of doses) in animal models. Initiated preparations for down-selection of filovirus candidate vaccine platform. DTO CB60 completed in FY06.	3312	0	0	0
Total	**10236**	**11844**	**12915**	**10097**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	16374	19188	14563	15487

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - (Additional studies to support the transition of oral therapeutics for orthopox to advanced development will be supported by TB2 in FY07 and the Viral Therapeutics program in FY08) - FY 06 - Tested the intravenous formulation of cidofovir in non-human primates (NHPs) to support Food and Drug Administration (FDA) licensure of the drug as a therapeutic for smallpox under the FDA Animal Efficacy Rule. Developed and executed initial steps in plan for licensure and manufacturing of oral cidofovir therapeutic candidate, leading up to milestone approval and transition. DTO CB54 completed.	2411	0	0	0
Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - (The follow-on DTO CB67 is designed to support filovirus therapeutic development building on the accomplishments of DTO CB63.) FY 06 - Determined the effect of treatment on viral pathogenesis in the mouse Ebola virus model and Marburg mice and guinea pigs models. Performed efficacy studies in NHP models that provide the best model for evaluation of the potential for treating filoviruses. Developed and executed initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Initiated a comprehensive analysis of mechanisms of protection. Completed analysis of studies performed to characterize the pathogenesis of Marburg virus (strain Ci67) in non-human primates in support of the FDA two animal efficacy rule. Completed DTO CB63.	2625	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Therapy for Ebola and Marburg Virus Infections (DTO CB67) - FY 07 - Design studies to compare the utility of therapeutic technologies against Ebola and Marburg viruses in animal models, considering FDA requirements for licensure under the animal rule. Technologies include antisense oligonucleotides, recombinant human monoclonal antibodies, small interfering RNAs (siRNA), small molecules, and therapeutic vaccines. FY 08 - Initiate testing in relevant small and large animal models to support Investigational New Drug (IND) submission and FDA licensure under the animal rule. Down-select leading technologies based on results from animal studies, in coordination with the advanced developer. FY 09 - Continue pivotal testing to support IND submission and transition of a nucleic acid based filovirus therapeutic to the advanced developer. Initiate FDA required studies to support the development and characterization of other leading therapeutic technologies against the Ebola virus and Marburg virus, with a focus on monoclonal antibody based therapeutics.	0	3264	5097	5420

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Viral -	1258	4364	5825	5885
FY 06 - Performed dose ranging studies in primates for lead compounds effective against viral threat agents. Initiated development of a treatment algorithm for severe Ebola infection.				
FY 07 - Test leading antivirals in appropriate, existing animal models and worst-case scenarios such as viral challenge dose, route, and variation in viral challenge strain, considering FDA requirements for product licensure under the animal rule. Conduct studies to support FDA licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Expand the effort to develop a treatment algorithm for severe Ebola infection.				
FY 08 - Initiate animal studies, as lead antiviral compounds effective against emerging and genetically engineered threats are identified, to support FDA submissions, milestone approval, and product transition to advanced development. Complete development of a treatment algorithm for severe Ebola infection. Complete studies transitioned from DTO CB54. Transition ST-246 as an oral therapeutic for orthopox virus infection to advanced development. Conduct FDA required non-human primate studies required to complete development of the oral prodrug of cidofovir as a therapeutic for orthopox viral infection.				
FY 09 - Conduct studies to support FDA submissions, milestone approval, and product transition to advanced development. Focus on evaluation of broad spectrum therapeutics effective against genetically engineered threats. Finalize requirements to transition oral cidofovir to the advanced developer.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Bacterial - FY 06 - Assessed select compounds for safety and efficacy against multiple bacterial threat agents in NHPs. Utilized enhanced aerobiology capabilities and animal models to characterize pharmacokinetic and pharmacodynamic profiles of bacterial therapeutics. FY 07 - Evaluate newly discovered and newly approved compounds with antibacterial activity for safety and efficacy against multiple bacterial threat agents in non-human primate and other appropriate animal models. Therapeutics studies should include not only treatment in models of active infection but also post-exposure prophylaxis. FY 08 - Conduct advanced safety and efficacy studies in non-human primates, considering FDA requirements for licensure of new therapeutics and approved therapeutics with a new indication. Efforts should be coordinated with the advanced developer to ensure the appropriate studies are conducted. FY 09 - Initiate advanced safety and efficacy studies for a nanobody based immunotherapeutic against plague. Conduct advanced safety and efficacy studies for broad spectrum antibacterials considering FDA requirements for licensure under the animal rule.	1925	3485	2330	2478
Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - FY 06 - Developed a technology for nonclinical studies of optimum therapeutic candidates/treatment modalities. Evaluated potential delivery systems for the lead peptide inhibitors. Refined and demonstrated, to the extent possible, additional technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans, specifically as a complement to future vaccination strategies. Completed DTO CB59.	4718	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Toxin - FY 06 - Conducted studies in animal models with lead compounds shown to have potential as inhibitors of target toxins (botulinum neurotoxin (BoNT), ricin, staphylococcal enterotoxin B (SEB)). FY 07 - Demonstrate in vivo suitable delivery systems for lead candidate compounds. Initiate evaluation of lead candidates in animal models acceptable for approval under the FDA animal rule. FY 08 - Evaluate lead compounds in support of FDA submissions, milestone approval, and future transition to advanced development. Develop therapeutic delivery systems in accordance with FDA requirements. FY 09 - Consider FDA requirements for developing BoNT therapeutics with the potential to restore synaptic activity following neuroparalysis due to intoxication, and plan initial studies to support these requirements.	1915	5855	1311	1704
Therapeutics, Resuscitative Intervention - FY 06/07 - Initiate and continue screening available technologies being developed for "golden hour" treatment of combat casualties against current medical countermeasures for nerve agent pre-treatment and therapy for drug interaction effects. Modeled patient physiological response to chemical (nerve) agent in silico to establish treatment response guidelines and to assist in evaluation of drug interaction effects.	1522	2220	0	0
Total	**16374**	**19188**	**14563**	**15487**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	867	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TB3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	867	0	0
Total	**0**	**867**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	26346	2600	0	0	122592	139754	133939	134012	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	49964	67358	69039	65396	57561	160884	143432	142500	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	20499	18225	28976	28526	29218	30777	31833	32133	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC3 MEDICAL CHEMICAL DEFENSE (ATD): This project supports the investigation of new medical countermeasures to include prophylaxes, pretreatments, antidotes, skin decontaminants and therapeutic drugs to protect U.S. forces against known and emerging chemical warfare threat agents. Capabilities are maintained for reformulation, formulation, and scale-up of candidate compounds using current good laboratory practices. 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 development 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 and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas in medical chemical defense capability areas (Pretreatments, Diagnostics, Therapeutics and Emerging Threats), and directed research efforts (Low Level Chemical Warfare (CW) agent exposure and Non-Traditional Agents (NTAs)).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	0	2328	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 07 - Antioxidant Micronutrient Therapeutic Countermeasures for Chemical Agents.	0	1337	0	0
FY 07 - Low Cost Chemical Agent (CA) Detection System for Mission Critical Facilities.	0	991	0	0
Total	**0**	**2328**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Diagnostics	554	592	684	702

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Diagnostic Technologies -	554	592	684	702
FY 06 - Continued advanced research experiments aimed at transitioning detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from chemical warfare agent (CWA) exposure. Expanded studies adapting the DoD-developed whole blood cholinesterase assay for organophosphate exposure to automation and high throughput testing; analyzed marker studies and standardized/converted test data from various methods to Walter Reed Army Institute of Research (WRAIR) units. Demonstrated the utility of a sulfur mustard plasma/blood protein assay in an inhalational model for sulfur mustard exposure. Worked with Centers for Disease Control (CDC) to validate a method to assay urinary hydrolysis products for nerve agents. Proceeded with in vivo validation of the fluoride reactivation assay to detect VX nerve agent and investigated potential strategies for incorporation of internal standard to fluoride reactivation assay.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Validate improved/novel assays against standard assays published in standard TB MED 296. Accelerate advanced research experiments aimed at transitioning detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CWA exposure. Conduct further animal studies to validate assays for detecting biomarkers of CWA exposure in biological samples. Complete automation/high throughput instrument validation for the DoD-developed whole blood cholinesterase assay for organophosphate exposure; complete normal baseline and variability studies; collate marker studies; expand efforts to adapt method to a hand-held, field deployable device allowing immediate evaluation of exposure to nerve agents, pesticides and other organophosphates. Initiate studies to incorporate an internal standard to improve the fluoride reactivation assay. Perform in vitro studies to optimize the sulfur mustard blood protein assay. FY 08 - Perform method validation studies for the improved fluoride reactivation method and initiate in vivo animal model exposure tests to characterize the assay. Continue metabolic profile (metabonomic) studies in animal exposure models by examining blood from agent exposed guinea pigs and assess feasibility as a potential diagnostic technique. Initiate method validation for optimized sulfur mustard blood protein assay. FY 09 - Conclude validation of the optimized sulfur mustard blood protein assay. Initiate validation of the beta-lyase urinary metabolite assay. Conclude metabonomics study and conduct data analysis. Complete validation of procedure to assess the presence of chemical warfare analytes from hair samples.	554	592	684	702
Total	**554**	**592**	**684**	**702**

	FY 2006	FY 2007	FY 2008	FY 2009
Emerging Threats	9406	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Emerging Threats, Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - FY 06 - Completed studies on the efficacy of barrier skin creams on Non-Traditional Agents (NTAs) and determined the effectiveness of current skin decontamination kits in treating NTA skin contamination. Determined the efficacy of oximes and human butyl cholinesterase against NTAs. Completed DTO CB57.	4233	0	0	0
Emerging Threats, Chemical Warfare Agent Defense, Low Level CW Agent Exposure - FY 06 - Completed studies on the effects of chronic low dose chemical exposure and possible medical countermeasures. Transitions to Therapeutics in FY07.	1129	0	0	0
Emerging Threats, Chemical Warfare Agent Defense, Low Level CW Agent Exposure - FY 06 - Effects and Countermeasures (DTO CB51) - Completed integration studies to determine the long term effects of exposure to low levels of chemical agents and determine their relevance to operational risk management hazard assessment. Completed DTO CB51.	2633	0	0	0
Emerging Threats, Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures - (DTO CB57) - FY 06 - Evaluated the pharmacokinetics of improved candidate medical countermeasures for comparison to the in vivo (inside the organism) persistence of NTAs. Conducted studies on human-derived butyrylcholinesterase (plasma and recombinant) as a bioscavenger protective molecule.	1411	0	0	0
Total	**9406**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Pretreatments	4302	5625	7979	8158

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Pretreatments, Nerve Agent, Bioscavengers -	4302	5625	7979	8158
FY 06 - Assessed plasma bioscavenger (Increment 1) in animal model studies for safety and efficacy. Supported studies for recombinant bioscavenger (Increment 2) transition to the advanced developer and toward Investigational New Drug (IND) status. Explored utility of peptide drugs as potential catalytic bioscavengers. Performed studies of the 3-D crystallographic structures of human carboxylesterase (CaE) and paraoxynase 1 (PON-1). Initiated the use of directed evolution or gene shuffling as an approach to identify Bioscavenger molecules. Determined physiological based pharmacokinetic (PBPK) models to predict bioscavenger efficacy in non-human primates (NHPs) models.				
FY 07 - Expand recombinant and catalytic bioscavenger efficacy, immunogenicity, and stability studies. Provide supportive studies for IND submission for recombinant bioscavenger candidate (Increment 1). Evaluate in vivo expression systems for bioscavenger delivery. Continue and expand structural studies of potential catalytic bioscavengers, including human carboxylesterase (CaE) and paraoxynase 1 (PON-1). Extend animal model evaluation, significantly reduced immunogenicity, and efficacy studies of recombinant and catalytic bioscavengers. Utilize recombinant bioscavenger molecules in homologous animal model systems to evaluate stability and immunogenicity. Pursue development of PBPK models that predict efficacy of bioscavengers in non-human primates.				
FY 08 - Complete all remaining supportive studies for recombinant bioscavenger candidate (Increment 2). Continue to evaluate in vivo expression systems for bioscavenger delivery. Pursue structural studies of potential catalytic bioscavengers, including human carboxylesterase (CaE) and paraoxonase 1 (PON-1). Optimize PBPK models that predict efficacy of bioscavengers in NHPs. Conduct efficacy studies of catalytic bioscavenger molecules.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Optimize in vivo expression systems for bioscavenger delivery. Complete structural studies of potential catalytic bioscavengers, such as carboxylesterase (CaE) and paraoxynase 1 (PON-1). Utilize PBPK models that predict efficacy of bioscavengers in NHPs for novel catalytic bioscavenger molecules. Evaluate catalytic bioscavenger molecules for safety, efficacy, stability and immunogenicity.	4302	5625	7979	8158
Total	**4302**	**5625**	**7979**	**8158**

	FY 2006	FY 2007	FY 2008	FY 2009
Therapeutics	6237	9505	20313	19666

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Therapeutics, Cutaneous and Ocular -	2617	3728	4063	3933
FY 06 - Evaluated a wide array of commercially available wound healing products for their efficacy in promoting improved healing of superficial dermal sulfur mustard injuries using a validated weanling pig model. Determined the safety and efficacy of a variety of selected compounds, including protease inhibitors, using a rodent model. Performed pharmacokinetic evaluations of selected antivesicants. Conducted efficacy studies to evaluate various decontaminants non-traditional agents (NTA) compared to no decontamination.				
FY 07 - Initiate pivotal animal efficacy studies for wound healing products, according to Food and Drug Administration (FDA) licensure requirements. Evaluate additional candidate decontamination systems for NTA exposure. Determine the efficacy of Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA) against non-traditional agents compared to no protection. Evaluate additional candidate formulations to meet protection requirements.				
FY 08 - Continue pivotal studies to support FDA licensure of wound healing products and antivesicants. Optimize dosing schemes, evaluate pharmacokinetics, and refine approaches for potential human use. Down-select new decontamination formulations and evaluate for efficacy in compliance with FDA regulations.				
FY 09 - Initiate NHP studies to determine long term effects of down-selected wound healing products and vesicant agents, in coordination with the advanced developer.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Neurologic - FY 06 - Maximized use of pharmacologic data obtained to develop improved single or multiple drug regimens to treat nerve agent induced seizures. Completed and compiled data for pharmacokinetic evaluations of most promising neuroprotectants. Investigated role of novel agents such as huperzineA in central nervous system (CNS) protection. Evaluated the neurobehavioral effects of nerve agents in non-human primates and rodents to investigate the role and efficacy of new therapeutic agents. Performed safety testing and dose range studies for new compounds in a non-human primate model. FY 07 - Establish pharmacokinetic and pharmacodynamic parameters of treatment to determine threshold therapeutic drug levels. Refine compound synthesis and selection. Perform neurobehavioral assessment of promising candidate products in the appropriate models. FY 08 - Test candidate neuroprotectants in one or more animal models, with a focus on requirements to support FDA submissions under the Animal Rule. Initiate safety/side effect/dosing and pharmacokinetic evaluation of new compounds. FY 09 - Conduct evaluation of novel and FDA approved anticonvulsants, neuroprotectants, anti-epileptics, and receptor agonists and antagonists for neuroprotective activity against nerve agents in animal models according to FDA requirements, as candidates become available.	3620	2620	12203	11783
Therapeutics, Medical Toxicology - Non-Traditional Agents (NTAs) and Other agents - FY 07 - Plan improved strategies for extrapolating NTA exposure hazards for human risk assessment utilizing existing and developing computational methods. FY 08 - Verify and validate new generation computational tools for predictive modeling. FY 09 - Develop and validate practical clinical strategies to aid in management of NTA casualties.	0	2000	3047	2950

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Therapeutics, Chemical Warfare Agent Operational Exposure Hazard Assessment Research (DTO CB69) - FY 07 - Extrapolate relevant experimental effects to determine post-exposure health problems that may impact subsequent operational readiness. Design and execute studies to generate scientifically valid data to serve as a basis for reducing the error in health risk assessment predictions for useful military Operational Risk Management (ORM) decisions. FY 08 - Conduct toxicokinetic modeling to support animal-to-human extrapolations of toxicity and to predict toxicity with various routes and durations of exposure. FY 09 - Complete data analysis and deliver dataset to define the operational effects from chemical agent contact and inhalation exposure. Complete DTRO CB69.	0	1157	1000	1000
Total	**6237**	**9505**	**20313**	**19666**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	175	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	175	0	0
Total	**0**	**175**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TC3

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	24809	37508	14529	4446	0	0	0	0	0	81292
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	2406	6391	21348	26106	16306	18897	17740	12173	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TE3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TE3	TEST & EVALUATION (ATD)	0	0	26269	26377	22401	19788	15613	15506	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TE3 TEST & EVALUATION (ATD): This funding supports the development of test and evaluation methodologies and protocols as new science and technology efforts are discovered that support developmental/operational testing. It includes the coordination of methodology development within a CBDP T&E Investment Strategy and the ongoing development of requirements for S&T infrastructure core capabilities. These new methodologies and testing capabilities include the development of simulants and stimulants. Projects under this item were previously reported in CB3 Test and Evaluation.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Test and Evaluation	0	0	26269	26377

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Test and Evaluation, Detection - FY 08 - Transition critical reagent program antigen variability research to Biosafety Level (BSL)-2 and BSL-3 production facilities. Complete and transition DoD standard for background interferent references and test procedures. Complete range test validation system. Continue optical acceptance measurement for test and evaluation antigens. FY 09 - Complete optical acceptance measurement for test and evaluation antigens.	0	0	9312	3500

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TE3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Test and Evaluation, Threat Agent Science - FY 08 - Incorporate non-traditional agent (NTA) data to define and develop improved NTA simulants to address test and evaluation needs. Identify requirements for and initiate development of simulants for CB warfare agents for use in test and evaluation efforts. Initiate development of simulants to reflect masking/encapsulation technology used with CB agents FY 09 - Complete development of NTA simulants for test and evaluation efforts. Continue development of simulants for other CB warfare agents for use in test and evaluation efforts. Continue development of masking/encapsulation simulants for CB agents.	0	0	1500	6040
Test and Evaluation, Modeling and Simulation Battle Space Management - FY 08 - Complete and deliver verified and validated overarching contamination avoidance model. Complete and deliver verified and validated overarching decontamination model. Complete and deliver verified and validated collective protection model. Develop support models for overarching individual protection model using requirements and existing models. FY 09 - Assemble support models into an overarching individual protection model architecture. Complete all development and transition of test and evaluation models.	0	0	5850	5275

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TE3

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Test and Evaluation, Protection - FY 08 - Complete development to standardize collective protection shelter systems test and evaluation standards, Toxic Industrial Chemicals (TIC)/battlefield contaminant set standards for Individual Protection Equipment (IPE) and Collective Protection (COLPRO), and standardize procedures for IPE Assessment. Continue real-time sampling/detector system swatch for use in Chemical and Biological Agent Resistance Test System (CBARTS), test methodology standards and guidance for air purification technologies, IPE field operations effect standard, and IPE air flow mapping. FY 09 - Complete real-time sampling/detector system swatch for use in CBARTS, test methodology standards and guidance for air purification technologies, IPE field operations effect standard, and IPE air flow mapping.	0	0	5707	7712
Test and Evaluation, Decontamination - FY 08 - Complete decontamination hazard byproduct and residual agent test standards and low level detection of residual agents in reaction products and deliver standard test methods to Service laboratories and other supporting test laboratories. Complete test protocols for decontamintation hazard byproduct and residual test standards and write and publish test operations procedures. FY 09 - Initiate test and evaluation methodologies and protocols for assessing reactivity of alternative technologies and processes.	0	0	3900	3850
Total	**0**	**0**	**26269**	**26377**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TE3

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TE4 TEST & EVALUATION (ACD&P)	17776	1992	14049	6407	5646	5497	11944	30028	Cont	Cont
TE5 TEST & EVALUATION (SDD)	18892	22163	45604	42481	37603	15485	15008	4844	Cont	Cont
TE7 TEST & EVALUATION (OP SYS DEV)	0	0	7016	7201	6922	8094	8235	8235	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TR3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	2153	2189	4825	2487	995	0	0	0	12649

A. Mission Description and Budget Item Justification:

Project TR3 MEDICAL RADIOLOGICAL DEFENSE (ATD): This project funds preclinical development of safe and effective prophylaxes for pre-exposure treatment against radiological threats. A broad range of technologies involved in the targeting and delivery of prophylactic medical countermeasures is evaluated so that the most effective countermeasures are identified for development. Entry of candidate pretreatment technologies into development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) and licensure processes and DoD acquisition regulations. Program objectives focus on mitigating the health consequences from exposures to ionizing radiation that represent a significant threat to US forces under current tactical, humanitarian, and counter terrorism mission environments. Findings from basic and developmental research are integrated into highly focused advanced technology development studies to produce the following: (1) protective therapeutic studies; (2) novel biological markers and delivery platforms for rapid, field-based individual dose assessment; and (3) experimental data needed to build accurate models for predicting casualties from complex injuries involving radiation and other battlefield insults.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Radioprotectants	0	2132	2189	4825

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TR3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Radioprotectants - FY 07 - Explore new promising candidate drugs found to have a radiological treatment dose efficacy expressed as dose-reduction factor (DRF) of 1.20 or greater in rodents. Initiate preclinical efficacy studies in non-human primates (NHPs) to include non-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism, and initial determination of formulation. Explore products and regimens that mitigate and/or treat radiation injury post-exposure, with emphasis on broad activity, ease of administration, and safety. Initiate study for promising radioprotectants that prevent/mitigate post-radiation exposure such as cytokines, nutraceuticals (probiotic), and anti-apoptotic and/or decoporating agents. FY 08 - Evaluate three to four promising drug candidates that have a DRF of 1.20 or greater in rodents. Using these promising drug candidates in rodents, initiate evaluation of the efficacy in NHPs for non-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism of action, and initial determination of formulation. Initiate evaluation of products and regimens that mitigate and/or treat radiation injury post-exposure, with emphasis on broad activity, ease of administration, and safety. Initiate evaluation for additional promising radioprotectants that prevent/mitigate post-radiation exposure such as cytokines, nutraceuticals (probiotic), and anti-apoptotic and/or decoporating agents. FY 09 - Continue to evaluate at least two promising candidate drugs found to have a DRF of 1.20 or greater in rodents. Evaluate efficacy of three to four candidate products and regimens that mitigate and/or treat radiation injury post-exposure, with emphasis on broad activity, ease of administration, and safety in NHPs. Continue to evaluate the preclinical efficacy studies in NHPs to include non-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism of action, and drug determination of formulation according to the Food and Drug Administration (FDA) two-animal efficacy rule. Evaluate promising radioprotectants that prevent/mitigate post-radiation exposure such as cytokines, nutraceuticals (probiotic), and anti-apoptotic and/or decoporating agents.	0	2132	2189	4825
Total	**0**	**2132**	**2189**	**4825**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TR3

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	21	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	21	0	0
Total	**0**	**21**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MR4 MEDICAL RADIOLOGICAL DEFENSE	0	8967	7117	3321	0	0	0	0	0	19405

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TT3	TECHBASE TECHNOLOGY TRANSITION	13661	12623	7667	8150	8463	8329	9430	9533	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TT3 TECHBASE TECHNOLOGY TRANSITION: This project supports technology transition efforts. These efforts test and demonstrate technologies being developed for transition from the Joint Science and Technology Office for Chemical and Biological Defense (JSTO-CBD) to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) and other acquisition programs requiring CB defense technologies. This project, initiated in FY06, was funded by realignment of funds previously in BA6, Anti Terrorism; BA3, CB3 funds for Technology Readiness Evaluations; BA3, CP3 funds for Counter Proliferation Support Program, Advanced Concept Technology Demonstration (ACTD) Planning and Development; and BA3, CM3 Homeland Defense, Weapons of Mass Destruction Civil Support Teams (WMD-CSTs). The WMD-CST program funds Pre-Systems Acquisition in support of Consequence Management teams around the nation. The Force Protection program demonstrates and tests technology for Force Protection/Installation Protection and specifically for PM Guardian's Installation Protection Program. Both the WMD-CST and Force Protection programs are in support of Homeland Defense initiatives. The Technology Transition program supports Advanced Technology Demonstrations and planning for Advanced Concept Technology Demonstrations. . The Technology Readiness Assessment program provides for assessment of technologies against specific criteria postulated by the JPEO in Technology Transition Agreements.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Congressional Interest Items	2136	1585	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Cooperative Unmanned Ground and Aerial Vehicle Incubator - Conducted Phase 2 for the National Testbed for Safety, Security and Rescue Technologies (NT-SSRT) facility. Project administered in CB3.	971	0	0	0
FY 06 - Hackensack University Medical Center Chemical Biological Defense Program Initiative Fund - Developed of a mobile, forward deployable, medical capacity that would respond to bio-terrorist incidents and other mass casualty incidents resulting from WMD, natural and technological disasters. Project administered in CB3.	1165	0	0	0
FY 07 - Unmanned Vehicle CBRNE Unitary Sensor Suite Development and Demonstration.	0	1585	0	0
Total	**2136**	**1585**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Experiment & Technology Demonstrations	4966	6087	5193	5475

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Executed the ATD Demonstration in support of the Military Applications in Reconnaissance and Surveillance (MARS) Unmanned Ground Vehicle (UGV) program testing CBRN detection technologies used on one-man and two-man portable UGVs for technology insertion into the CBRN Unmanned Ground Reconnaissance (CUGR) ACTD. Initiated the ATD Candidate Development for MARS - Unmanned Ground System (UGS) program testing CBRN detection technologies for use on one-man portable UGSs. Biological detection focus initiated with Expeditionary Biological Detection project. Executed the ATD Testing for MARS Manned/Unmanned Aerial Vehicle (M/UAV) program testing CBRN detection technologies for use on small UAVs dedicated to CBRN passive defense or CBRN consequence management, reconnaissance and surveillance applications. Conducted Table Top Exercises (TTX) and discovered military user priorities for further experimentation.	4966	6087	5193	5475

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - MARS - Continue Unattended Ground Sensors (UGS) program testing CBRN detection technologies for use on one man portable UGSs. Biological detection ATD initiated and transitioned to BA4 funding under Expeditionary Biological Detection ATD and the MARS M/UAV program testing CBRN detection technologies for use on small UAVs dedicated to CBRN passive defense or CBRN consequence management, reconnaissance and surveillance applications. Initiate development of the aerial CBRN test methodology. Initiate ATD demonstration Special Platform Interior Decontamination and Equipment Remediation (SPIDER), testing of vaporous decontamination on designated aircraft to confirm biological agent kill, development of technical order for the qualification of the decontamination of designated aircraft using the vaporous decontamination process. Initiate technical testing to confirm biological agent kill. Perform candidate technology maturation testing in preparation for FY08 ATD candidate, SPIDER. Initiate aircraft interior biological remediation project. FY 08 - Complete the M/UAV program testing CBRN detection technologies for use on small UAVs dedicated to CBRN passive defense or CBRN consequence management, reconnaissance and surveillance applications. Initiate all hazards awareness technology testing to identify and integrate data sources for Joint Warning and Response Network (JWARN) to improve capability to sense and identify CBRN hazards sooner than current situational awareness capabilities. Continue CBRN capability insertion into non CBDP platforms, systems and programs of record. Initiate Integrated CBRN Sensing, Unmanned/Unattended Systems program testing CBRN detection technologies for use in unmanned air or surface carriers, stationary and mobile. Analyze the capability of current and near term platforms that may either be capable of or are required to sense the CBRN hazards. Complete candidate technology maturation testing in preparation for a FY08 ATD candidate, SPIDER. Perform candidate technology maturation testing in preparation for a FY09 ATD candidate, Advanced Remediation Technologies (ART).	4966	6087	5193	5475

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Continue Integrated CBRN Sensing, Unmanned/Unattended Systems program testing CBRN detection technologies for use in unmanned air or surface carriers, stationary and mobile. Analyze the capability of current and near term platforms that may either be capable of or are required to sense the CBRN hazards. Perform candidate technology maturation testing in preparation for a FY09 ATD candidate for ART. Perform candidate technology maturation testing in preparation for a FY10 ATD candidate. Continue all hazards awareness technology testing to identify and integrate data sources for JWARN to improve capability to sense and identify CBRN hazards sooner than current situational awareness capabilities. Complete testing of candidate technologies for ART and CBRN capability insertion into non CBDP platforms, systems and programs of record.	4966	6087	5193	5475
Total	**4966**	**6087**	**5193**	**5475**

	FY 2006	FY 2007	FY 2008	FY 2009
Force Protection	439	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Initiated effort for the development and demonstration of medical surveillance technology integration for the installation protection program. Program transitions in FY 07 to the Homeland Defense capability area.	439	0	0	0
Total	**439**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Homeland Defense	0	2889	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 07 - Conduct reach-back capability study to identify significant CBRNE reach-back requirements and resources of DoD components and Federal, State and local agencies for Weapons of Mass Destruction Civil Support Teams (WMD-CSTs). Complete operational testing and Homeland Defense Demonstrations for WMD-CSTs. Complete the transition of technologies tested in FY06 processes thru the JPEO-CBD Non-Standard Equipment Review Panel (NSERP) process. Initiate coordination and development of the Interagency Biological Remediation Demonstration (I-BRD). This DOD-DHS cooperative program is focused on providing a coordinated, systems approach to the recovery and restoration of wide urban areas, to include DOD infrastructures and high traffic areas following the aerosol release of a biological agent.	0	2889	0	0
Total	**0**	**2889**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
Technology Readiness Assessment	3133	1952	2474	2675

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Completed Technology Readiness Evaluation (TRE) for Collective Protection in the following focus areas: CB Barrier Material, Quick Erect, Collective Protection (COLPRO) Support Equipment, and Whole COLPRO Systems and performance testing of the Collective Protection Air Purification technologies. Conducted Technology Readiness Assessments (TRAs) for the Military Applications in Reconnaissance and Surveillance Unmanned Ground Vehicle (MARS-UGV) and the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM). Initiated the development of a tailored Manufacturing Readiness Assessment process for future S&T transitions.	3133	1952	2474	2675

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 07 - Continue the development of a tailored Manufacturing Readiness Assessment process appropriate for transitioning technologies. Continue the MARS - UGV program testing CBRN detection technologies for use on one-man and two-man portable UGVs for technology insertion into the Chemical, Biological, Radiological, and Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) Advanced Concept Technology Demonstration (ACTD) or the transition program for CUGR ACTDs UGV portion. FY 08 - Conduct TRE in support of the Interagency Biological Remediation Demonstration (I-BRD). This DOD-DHS cooperative program is focused on providing a coordinated, systems approach to the recovery and restoration of wide urban areas, to include DOD infrastructures and high traffic areas following the aerosol release of a biological agent. FY 09 - Conduct Technology Readiness Evaluations in support of remediation and restoration technology demonstrations to identify technologies in support of IBRD, Installation Protection and Civil Support mission areas.	3133	1952	2474	2675
Total	**3133**	**1952**	**2474**	**2675**

	FY 2006	FY 2007	FY 2008	FY 2009
WMD-CST	2987	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA3 - Advanced Technology Development (ATD)

PE NUMBER AND TITLE
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)

PROJECT
TT3

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
FY 06 - Performed operational testing and Homeland Defense Demonstrations. Continued evaluation and testing of new commercial products being considered in response to WMD-CST requirements. Transitioned technologies tested in FY05 and FY06 processes thru the Joint Program Executive Office Chemical and Biological Defense (JPEO-CBD) Non-Standard Equipment Review Panel (NSERP) process. Program transitions in FY 07 to the Homeland Defense capability area.	2987	0	0	0
Total	**2987**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	110	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	110	0	0
Total	**0**	**110**	**0**	**0**

C. Other Program Funding Summary:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	21960	0	0	0	0	0	0	0	0	21960

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BUDGET ACTIVITY 4
ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES (ACD&P)

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	127371	80407	57160	42467	170556	184559	185620	209767	Continuing	Continuing
CA4	CONTAMINATION AVOIDANCE (ACD&P)	14650	4996	3125	3165	23047	19905	16559	20881	Continuing	Continuing
CM4	HOMELAND DEFENSE (ACD&P)	10978	0	0	0	0	0	0	0	0	10978
CO4	COLLECTIVE PROTECTION (ACD&P)	6588	0	0	0	0	0	0	0	0	6588
CP4	COUNTERPROLIFERATION SUPPORT (ACD&P)	21960	0	0	0	0	0	0	0	0	21960
DE4	DECONTAMINATION SYSTEMS (ACD&P)	989	1000	3093	7662	0	0	0	0	0	12744
IS4	INFORMATION SYSTEMS (ACD&P)	3275	0	0	0	0	0	3591	4846	Continuing	Continuing
MB4	MEDICAL BIOLOGICAL DEFENSE (ACD&P)	26346	2600	0	0	122592	139754	133939	134012	Continuing	Continuing
MC4	MEDICAL CHEMICAL DEFENSE (ACD&P)	24809	37508	14529	4446	0	0	0	0	0	81292
MR4	MEDICAL RADIOLOGICAL DEFENSE	0	8967	7117	3321	0	0	0	0	0	19405
TE4	TEST & EVALUATION (ACD&P)	17776	1992	14049	6407	5646	5497	11944	30028	Continuing	Continuing
TT4	TECHBASE TECHNOLOGY TRANSITION (ACD&P)	0	23344	15247	17466	19271	19403	19587	20000	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

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 has recently expanded and has 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, and 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, topical skin protectants, anticonvulsants, biological agent diagnostics, and vaccines to protect against various Biological Warfare (BW) agents. 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 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 Budget Activity 4.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	122274	73111	139990	149679
FY08 President's Budget	127371	80407	57160	42467
Total Adjustments	5097	7296	-82830	-107212
a. Congressional General Reductions	0	-2304	0	0
b. Congressional Increases	3257	9600	0	0
c. Reprogrammings	3228	0	0	0
d. SBIR/STTR Transfer	-1190	0	0	0
e. Other Adjustments	-198	0	-82830	-107212

Change Summary Explanation:

Funding: FY08 - Realignment of funding to BA2 in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (-$69,096K MB4). Establish separate project to develop test capabilities to evaluate CBRN Defense systems (+$14,409K TE4). Other fund adjustments and realignments (-$4,906K CP4; -$10,905K CP4; -$1,424K DE4; -$1,926K MB4; -$688K MC4).

FY09 - Realignment of funding to BA3 in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (-$97,136K TB3). Establish separate project to develop test capabilities to evaluate CBRN Defense systems (+$6,407K TE4). Other fund adjustments and realignments (-$9,203K CA4; +$2,383K CP4; +$5,085K DE4; -$2,299K MB4; -$582K MC4).

Schedule: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CA4	CONTAMINATION AVOIDANCE (ACD&P)	14650	4996	3125	3165	23047	19905	16559	20881	Continuing	Continuing

A. <u>Mission Description and Budget Item Justification:</u>

Project CA4 CONTAMINATION AVOIDANCE (ACD&P): This Advanced Component Development and Prototypes (ACD&P) funding supports Component Advanced Development and System Integration (CAD/SI) of reconnaissance, detection, identification, and hazard prediction equipment, hardware, and software. Individual projects are: (1) Joint Biological Tactical Detection System (JBTDS), (2) Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM) and (3) Joint NBC Reconnaissance System (JNBCRS) Inc 1.

The JBTDS will be a lightweight biological agent detector that will detect, warn and isolate samples. Sample isolation will permit sample evacuation and confirmatory analysis. The detector will be networked to provide a cooperative detection capability to increase the probability of warning personnel and reduce the probability of false alarm. The JBTDS will be one man portable (i.e. < 35 lbs) and capable of being battery operated.

The JCBRAWM will provide an enhanced detection capability for waterborne CBR agents using an incremental development strategy. Increment 1 will provide the first biological and radiological detection capability in water. Increment 2 will improve on the Increment 1 biological detection capability and the fielded M272 Water Test Kit chemical agent detection capability. Increment 3 will replace the M272 Water Test Kit chemical agent detection capability with new technology. Increment 4 will provide a capability for in-line and continuous sampling for CBR contamination.

Joint NBC Reconnaissance System (JNBCRS) I - This joint program follows a modified Non-Developmental Item (NDI) strategy integrating Government Furnished Equipment (GFE), NDI, and systems undergoing development in parallel programs into an integrated suite of detection, analysis, and dissemination of equipment/software.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT BIO TACTICAL DETECTION SYSTEM	0	987	3125	3165
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JBTDS - FY 07 - Establish Product Office and perform Pre Milestone (MS) A activities for new program start and initiate Integrated Process Teams (IPTs).	0	785	0	0
JBTDS - FY 07/08/09 - Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	202	326	330
JBTDS - FY 08/09 - Conduct MS B activities, continue IPT and initiate and conduct Technology Readiness Evaluation (TRE).	0	0	1243	785
JBTDS - FY 08 - Initiate Modeling & Simulation support, data fusion network demonstration, sensor density study and algorithm verification and validation.	0	0	1556	0
JBTDS - FY 09 - Initiate system design and development.	0	0	0	2050
Total	**0**	**987**	**3125**	**3165**

	FY 2006	FY 2007	FY 2008	FY 2009
JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITO	3400	0	0	0
RDT&E Articles (Quantity)	5000	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCBRAWM - FY 06 - Continued systems engineering support and initiated document preparation for MS A.	552	0	0	0
JCBRAWM - FY 06 - Continued procurement of test items (2,000 test tickets at $0.1K each, $200K total, Vendor: ANP Technology, Inc.; 3,000 test tickets at $0.07 each, $200K total, Vendor: SAS, Inc.).	400	0	0	0
JCBRAWM - FY 06 - Initiated and completed test and evaluation efforts to include preparation of test methodology, design of test set-up and development of equipment specifications. Initiated probability/receiver operating characteristics curves.	2448	0	0	0
Total	**3400**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS) I	2137	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JNBCRS I - FY 06 - Conducted Limited Objective Experiment (LOE) to establish the foundation for standard interface control documents for Chemical Biological Radiological Nuclear Explosive (CBRNE) sensor manufacturers.	1657	0	0	0
JNBCRS I - FY 06 - Developed an analytically based rationale for choosing challenge levels for setting requirements for protective materials and other CBDP commodities.	240	0	0	0
JNBCRS I - FY 06 - Provided modeling and simulation technical support as part of the technical architectural development for Future Combat Systems.	240	0	0	0
Total	**2137**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

	FY 2006	FY 2007	FY 2008	FY 2009
MDAP SUPPORT	0	3963	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
MDAP SPRT #1 - Congressional Interest Item - FY 07 - Naval Post Graduate School Coalition and Operating Area Surveillance Targeting Systems (COASTS).	0	991	0	0
MDAP SPRT #2 - Congressional Interest Item - FY 07 - Photovoltaic Power Supply for Autonomous Sensors.	0	991	0	0
MDAP SPRT #3 - Congressional Interest Item - FY 07 - Wide Spectrum Bio-ID.	0	1981	0	0
Total	**0**	**3963**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
TECHNOLOGY TRANSFER FOR BIO SENSORS	9113	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06 - Continuation of Robotics Testbed & Establishment of Cooperative Unmanned Ground and Aerial Vehicle Incubator.	991	0	0	0
TT Bio - Congressional Interest Item - FY 06 - Next Generation Dual Use Bio-Defense Technologies.	991	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
TT Bio - Congressional Interest Item - FY 06 - Advance Sensor Technology R&D Center.	1486	0	0	0
TT Bio - Congressional Interest Item - FY 06 - Wide-Spectrum Bio-ID Sensor.	4159	0	0	0
TT Bio - Congressional Interest Item - FY 06 - BioBlower.	1486	0	0	0
Total	**9113**	**0**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SBIR/STTR	0	46	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SBIR - FY 07 - Small Business Innovative Research.	0	46	0	0
Total	**0**	**46**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CA5 CONTAMINATION AVOIDANCE (SDD)	68829	46352	31623	36677	42135	53117	64030	34943	Cont	Cont
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	9671	7008	0	0	0	0	0	0	0	16679
JC0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	112766	105333	77784	76397	112000	111957	101539	100360	Cont	Cont
JC0101 JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITOR	0	0	5047	6067	3221	0	0	0	0	14335
JC0250 JOINT BIO STANDOFF DETECTOR SYSTEM (JBSDS)	16483	0	0	0	0	0	0	20161	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	58460	10225	7814	0	0	0	0	0	0	76499
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	22588	33855	38393	38114	35437	47001	63340	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	34511	14437	0	0	0	0	0	0	0	48948
MC0100 JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)	31151	52586	50385	75261	101413	119453	159700	164043	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

C. Other Program Funding Summary (Cont):

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MX0001 JOINT BIOLOGICAL TACTICAL DETECTION SYSTEM	0	0	0	0	0	8365	15365	25321	Cont	Cont
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	14615	19497	16440	0	0	0	0	10000	Cont	Cont

D. Acquisition Strategy:

JBTDS

The JBTDS will use an evolutionary development strategy to spiral in upgrades/improvements until the objective requirements are met. The JBTDS program will execute Milestone A in FY07. Technology Development Phase will run thru FY09 to develop system concepts, prepare Milestone B documentation and reduce risk. Technology Development will include conduct of market research, technology demonstrations, modeling and simulation efforts, data fusion network demonstrations, and evaluation of the most promising government and commercial technology in a Technology Readiness Evaluation. System Development and Demonstration (SDD) phase will commence with Milestone B. SDD will finalize system designs and procure devices to test and demonstrate device capabilities against requirements. Pre-milestone activities to reach Milestone A were initiated in FY06.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

JCBRAWM

JCBRAWM will provide an enhanced detection capability for waterborne CBR agents using an incremental development strategy. Increment 1 will provide the first biological and radiological detection capability in water. Milestone C for Low Rate Initial Production (LRIP) is planned for 1QFY08. Increment 2 will improve on the Increment 1 biological detection capability and the fielded M272 Water Test Kit chemical agent detection capability. MS B of Increment 2 is planned for FY09. Increment 3 will replace the M272 Water Test Kit chemical agent detection capability with new technology. MS B for Increment 3 is planned for FY11. Increment 4 will provide a capability for in-line and continuous sampling for CBR contamination. MS B for Increment 4 is planned for FY14.

JNBCRS I

This joint program follows a modified Non-Developmental Item (NDI) strategy integrating Government Furnished Equipment (GFE), NDI, and systems undergoing development in parallel programs into an integrated suite of detection, analysis, and dissemination of equipment/software. A Low Rate Initial Production contract for the build and integration of 14 M1113 HMMWV variants was awarded on 4 March 2004. Two production representative LAVs were tested concurrently with LRIP HMMWVs during the 3QFY06. Initial Operational Capability (IOC) for HMMWV and LAV variants is Jun 07 (Objective) and Dec 07 (Threshold). Upon successful completion of LRIP and Multi-service Test and Evaluation (MOT&E), a Full Rate Production (FRP) competitive contract is anticipated.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBTDS													
SW SB - Data Fusion Network capability demonstration	C/CPFF	TBD	C	0	0	NONE	660	1Q FY08	0	NONE	0	660	0
SW SB - Sensor Density Study	C/CPFF	TBD	C	0	0	NONE	456	1Q FY08	0	NONE	0	456	0
HW C - System Development	C/CPFF	TBD	C	0	0	NONE	0	NONE	2050	2Q FY09	0	2050	0
MDAP SPRT													
MDAP SPRT #1 - COASTS	SS/FP	TBD	C	0	991	4Q FY07	0	NONE	0	NONE	0	991	0
MDAP SPRT#2 - Photovoltaic Power Supply	SS/FP	TBD	C	0	991	4Q FY07	0	NONE	0	NONE	0	991	0
MDAP SPRT#3 - Wide Spectrum Bio-ID	SS/FP	TBD	C	0	1981	4Q FY07	0	NONE	0	NONE	0	1981	0
Subtotal I. Product Development:					3963		1116		2050		0	7129	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBTDS													
ES S - Milestone B Analysis and Document Development	C/FP	TBD	C	0	785	2Q FY07	1013	2Q FY08	785	2Q FY09	0	2583	0
ES S - Modeling and Simulation Support	MIPR	JPM IS, San Diego, CA & ECBC, Edgewood, MD	U	0	0	NONE	380	2Q FY08	0	NONE	0	380	0
ES S - Algorithm Verification and Validation	C/CPFF	JHU-APL, Columbia, MD	F	0	0	NONE	60	2Q FY08	0	NONE	0	60	0
Subtotal II. Support Costs:					785		1453		785		0	3023	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBTDS													
DTE S - TRE Support	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	140	2Q FY08	0	NONE	0	140	0
OTHT SB - Developmental Test Planning and IPT support	MIPR	DTC, Aberdeen, MD	U	0	0	NONE	90	2Q FY08	0	NONE	0	90	0
Subtotal III. Test and Evaluation:					0		230		0		0	230	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBTDS													
PM/MS S - JPM BD, APG, MD	MIPR	JPM BD, APG, MD	U	0	202	1Q FY07	326	1Q FY08	330	1Q FY09	0	858	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	46	NONE	0	NONE	0	NONE	0	46	0
Subtotal IV. Management Services:					248		326		330		0	904	
Remarks:													
TOTAL PROJECT COST:					4996		3125		3165		0	11286	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JBTDS																																
MS A Decision							3Q																									
Market Survey					1Q	—	3Q																									
System Engineering Trade Study							3Q	4Q																								
CDD							3Q	—	—	—	3Q																					
MS B Doc Prep								4Q	—	—	—	4Q																				
MS B Decision														2Q																		
SDD														2Q	—	—	—	—	—	4Q												
Capability Production Document																	1Q	—	—	4Q												
MS C Decision																					1Q											
Low Rate Initial Production (LRIP)																					1Q	—	3Q									
Developmental Test & Evaluation																	1Q	—	—	4Q												
Operational Test & Evaluation																					1Q	—	—	4Q								
Full Rate Production (FRP) Decision																										2Q						
FRP																										2Q	—	—	—	—	—	4Q
First Unit Equipped (FUE)																											3Q					
JCBRAWM																																

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCBRAWM (Cont)																																
Purchase Test Items	>>	2Q																														
Contractor Test & Evaluation Efforts	>>	—	—	4Q																												
JNBCRS I																																
Initial Prototype Delivery			3Q	4Q																												
Advanced Prototype Delivery					1Q																											
Technical Report						2Q																										

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CM4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CM4	HOMELAND DEFENSE (ACD&P)	10978	0	0	0	0	0	0	0	0	10978

A. Mission Description and Budget Item Justification:

Project CM4 HOMELAND DEFENSE (ACD&P): This project funds component level testing of Commercial off-the-shelf (COTS) chemical and biological detection equipment in support of Weapons of Mass Destruction Civil Support Team (WMD-CST) operations. Complimentary development efforts continue into CM5 for the Analytical Laboratory System (ALS) Increment 1 and Unified Command Suite (UCS) Increment 1 upgrades. In addition, this project funds the development of COTS Training Devices in support of the WMD-CST mission.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
TECHNOLOGY TRANSFER FOR BIO SENSORS	8417	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06 - Countermeasures to Chemical and Biological Threats/Rapid Response.	8417	0	0	0
Total	**8417**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CM4

	FY 2006	FY 2007	FY 2008	FY 2009
WMD - CIVIL SUPPORT TEAMS	2561	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
WMD-CST - FY 06 - Provided Government Engineering and Planning Support.	311	0	0	0
WMD-CST - FY 06 - Conducted component testing of Commercial off-the-shelf (COTS) detection, protection and decontamination equipment.	2047	0	0	0
WMD-CST - FY 06 - Conducted testing of Analytical Laboratory System (ALS) components.	203	0	0	0
Total	**2561**	**0**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CM5 HOMELAND DEFENSE (SDD)	387	4000	0	0	0	0	0	0	0	4387
JS0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	56404	13146	0	0	0	0	0	0	0	69550
JS0500 CB INSTALLATION FORCE PROTECTION PROGRAM	144708	76619	86418	88748	62300	60070	0	0	0	518863

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CM4

D. Acquisition Strategy:

WMD CST

This program utilizes multiple acquisition vehicles to deliver a CBRN capability to the WMD CSTs.

ALS Increment 1:
The ALS Increment 1 program will upgrade the analytical capability of the ALS System Enhancement Program (SEP) system with the objective of improving chemical and biological detection sensitivity and selectivity in line with the requirements as outlined in the validated Capability Production Document (CPD).

Government off-the-shelf (GOTS) Detection, Protection, and Decontamination Equipment:
Procure Chemical and Biological Defense equipment as outlined in Defense Reform Directive #25 (see GOTS items listed below under Program Unit Cost).

COTS Evaluation:
Evaluate existing and new COTS equipment for incorporation into the NGB CST Table of Distribution and Allowances (TDA) and USAR Letter of Authorization (LOA).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CM4

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

Exhibit R-4a, Schedule Profile

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CM4

D. Schedule Profile:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
WMD CST								
COTS - GOTS PROGRAM	>> 4Q							
Testing - Phase 2 HAPSITE Multi-Service	1Q							
Testing - COTS Detection, Protection, Decontamination Equipment Validation Testing	1Q 4Q							

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CO4	COLLECTIVE PROTECTION (ACD&P)	6588	0	0	0	0	0	0	0	0	6588

A. Mission Description and Budget Item Justification:

Project CO4 COLLECTIVE PROTECTION (ACD&P): Funding supports component development and integration of Chemical and Biological (CB) Collective Protection Systems that are smaller, lighter, less costly and more easily supported logistically at the crew, unit, ship, and aircraft level. Collective Protection Systems define a number of unique components that incorporate common basic principles and ensure that breathing air introduced into selected areas or zones is always clean and contaminated air cannot seep into those areas. Generally, Collective Protection technologies incorporate special filters for cleaning contaminated air and high pressure fans to deliver the clean air into the selected area. The fans also provide an over-pressure to prevent infiltration of contaminated outside air. Additionally, some protected areas like portable shelters, may require a special liner or material to be applied inside the shelter to prevent contaminates from infiltrating. In summary, Collective Protection provides a safe, shirt-sleeve environment for a single warfighter or a group of warfighters regardless of the contamination levels outside the protected area.

System funded under this project is: (1) Joint Expeditionary Collective Protection (JECP).

JECP - Results of a Baseline Capability Assessment conducted by the Joint Requirements Office (JRO) identified expeditionary Collective Protection (CP) as the highest priority capability gap within the commodity area. JECP provides the Joint Expeditionary Forces a Collective Protection (CP) capability which is lightweight, compact, modular, and affordable. A family of systems is planned that will allow the application of CP to portable hard-side and soft-side shelters, enclosed spaces of opportunity, and in remote austere locations as a stand alone 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), heat, dust, and sand. The employment of JECP is a strategic deterrence against enemy use of CBRN agents or TIMs, and will reduce the need for personnel and equipment decontamination.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	6588	0	0	0
RDT&E Articles (Quantity)	30	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JECP - FY 06 - Established the Systems Management Office (SMO) for day-to-day program execution including overall guidance and direction to the JECP IPT, budget preparation, generation of acquisition documentation supporting milestone decisions and JPEO/JPM reporting requirements. The SMO led all contracting related efforts, providing the core framework and language for all JECP contractual documentation including but not limited to RFP's, source selection plans, source selection criteria, contract language, contract modifications, and contract options.	735	0	0	0
JECP - FY 06 - Established the Systems Engineering Working-level IPT (SE WIPT) responsible for implementing a disciplined and robust systems engineering process throughout the acquisition life cycle in accordance with the JPEO-CBD Systems Engineering policy. The SE WIPT led all performance and technical related efforts associated with JECP. Major tasks included development, maintenance, and oversight of the System Engineering plan, Work Breakdown Structure (WBS), system architecture, system performance specification, Technology Development strategy, and technology demonstrations.	1075	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
JECP - FY 06 - Conducted an Analysis of Alternatives (AoA) leveraging the market survey, test results, and lessons learned from the FY05 ColPro Technology Readiness Evaluation (TRE). Planned a Limited Objective Experiment (LOE) with the Joint Combat Developer, Joint Experimentation and Analysis Branch, to examine service unique tactics, techniques, and procedures. Collaborated with the JRO Shield Integrator in preparing acquisition documentation and decision review package for Milestone (MS) A. Provided subject matter expert support to the Joint Requirements Office (JRO) in development of the Concept of Operation (ConOps) and the Capability Development Document (CDD). Developed a Life Cycle Cost Estimate (LCCE) for MS B.	633	0	0	0
JECP - FY 06 - Leveraged the findings of the ColPro TRE and the AoA for the basis of selected technology demonstrations. The purpose of the technology demonstrations was to mitigate risk and identify affordable mature technologies that individually or together meet the warfighters needs. Technologies demonstrated included; five whole CP systems with an average unit cost of $67.2K, two quick erect liners at an average unit cost of $82K, two quick erect airlocks at an average unit cost of $76.5K, and one passive CP Shelter at a unit cost of $28K. Planned Residual Life Indicator demonstration will develop 20 cartridges at an average cost of $9K. The total cost of technologies demonstrated was $861K. The Systems Engineering Working Integrated Product Team (SE WIPT) worked closely with the System Management Office (SMO) to plan, procure, test, and oversee all of the selected technology demonstrations.	2348	0	0	0
JECP - FY 06 - Established the Test & Evaluation Working-level IPT (TE WIPT) to lead all aspects of the JECP test program including the Test & Evaluation Master Plan (TEMP), Operational Assessments (OA), and Developmental Testing (DT). Coordinated with the Operational Test Agency (OTA) for Operational Testing (OT), the T&E Executive, the Product Director for Test Evaluation Systems and Support (PD-TESS), and the Test & Evaluation Capability Management IPT (TECM IPT) to ensure infrastructures and methodologies are available and certified to support system testing.	995	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JECP - FY 06 - Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	802	0	0	0
Total	**6588**	**0**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**To Compl**	**Total Cost**
CO5 COLLECTIVE PROTECTION (SDD)	656	12534	13956	11477	2728	0	0	0	0	41351
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	10377	8798	10564	5124	0	0	0	0	0	34863
JP0911 CP FIELD HOSPITALS (CPFH)	2900	4073	3519	3369	3475	3519	4318	4739	Cont	Cont
JP1111 JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)	0	0	0	0	6173	7997	5171	4790	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	18137	30462	24774	32001	32424	32828	37363	37330	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

D. Acquisition Strategy:

JECP

Strategy based on incremental development in consonance with the JRO/User developed capability documents. During the Pre-MS A Concept Refinement Phase, conduct 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 will be conducted to mitigate risk and identify affordable mature technologies that individually or together meet the warfighters needs. Following MS B, a Statement of Objectives (SOO) and Performance Specification will be used to award competitive cost plus incentive type contract(s) to build prototypes that will be subjected to robust engineering developmental testing and Operational Assessment during the System Development & Demonstration phase. Following MS C, award a contract for Low Rate Initial Production (LRIP) to support formal Developmental Testing (DT) and Initial Operational Test & Evaluation (IOT&E). Following a successful Full Rate Production (FRP) decision, award a fixed price production contract with multi-year options and product improvement incentives. For each incremental capability identified by the user, a similar approach for MS B and C will be used to seamlessly integrate improved and/or new technologies into follow-on increments to achieve a full JECP capability.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CO4

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JECP																																
AoA	1Q	2Q																														
MS-A Decision			3Q																													
Technology Demonstrations			3Q			2Q																										
Complete CDD						2Q																										
Decision Review						2Q																										
Limited Objective Experiment					1Q	2Q																										
MS-B Decision							3Q																									

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CP4	COUNTERPROLIFERATION SUPPORT (ACD&P)	21960	0	0	0	0	0	0	0	0	21960

A. Mission Description and Budget Item Justification:

Project CP4 COUNTERPROLIFERATION SUPPORT (ACD&P): Technology Demonstrations validate high-risk/high-payoff technologies that could significantly improve warfighter capabilities. These programs offer an opportunity to identify and efficiently move emerging technologies from laboratory experiments to acquisition programs thru risk reduction, engineering and integration. They cover integrating and assessing technology in a realistic operational environment and often assess the technology as an integrated system. They seek to demonstrate the potential for enhanced military operational capability and/or cost effectiveness. Upon conclusion of the demonstration, the user/sponsor provides a determination of the military utility and operational impact of the technology 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.

The Contamination Avoidance at Sea Ports of Debarkation (CASPOD) ACTD provides technologies, tools, tactics and procedures for the recovery of throughput operations after a chemical or biological attack at a seaport during times of a major logistics operation. The CASPOD ACTD provided 13 technologies that were fielded into the CENTCOM AOR for the Extended User Evaluation and residual support phase. The ACTD completed at the end of FY06 and the residual support will terminate in March 2007.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

The Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance Vehicle (CUGR). ACTD will address several critical operational issues to enhance the speed, effectiveness, capabilities, and automation of surface and area CBRN contamination detection and identification. The technologies will be used to enhance the Joint NBC Reconnaissance System (JNBCRS) by using a non-surface contacting optical system that provides both surface contamination detection and identification in near real-time. Capabilities include traditional chemical agents and Toxic Industrial Chemicals (TICs). Additionally, the ACTD will provide a small unmanned ground platform (robotic) equipped with sensor packages capable of conducting CBRN detection. This unmanned platform will enable the reconnaissance crew to conduct CBRN reconnaissance in limited maneuver areas using a robotic platform carrying CBRN sensors that report findings to the operator using active telemetry.

The lack of a man portable point-detector for aerosolized Biological Weapons (BW) is not currently being met by existing DoD biological detection systems. This leaves expeditionary forces vulnerable to attack without indication until those exposed present symptoms. BW detection systems currently fielded are large, heavy, power-intensive, and expensive to procure and support. The Marine Corps has no fielded biological detection capability due to lack of system suitability and the dedicated force structure. The Expeditionary Biological Detection (EBD) ATD will be initiated with a Front End Analysis (FEA) to compare existing DoD biological agent detection/identification systems against USMC tactical biological detection needs. Candidate system must be able to automatically detect aerosolized BW clouds and collect samples for presumptive and confirmatory identification. The ability to discriminate, classify or identify the threat is desired. The system must be deployable and employable by Marine expeditionary forces and must be suitable for use within existing Marine Air-Ground Task Force (MAGTF) logistics and manpower constraints. Additionally, the role of portable biological point detectors in the greater context of existing Joint biological detection systems will be considered.

This Project transitions to Project TT4 in FY07.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
CPSP COUNTERPROLIFERATION SUPPORT	21960	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Contamination Avoidance at Seaports of Debarkation (CASPOD) ACTD (DTO JD23) - FY 06 - Completed procurement and contractor logistics support services for residual support on selected technologies. Finalized CASPOD ACTD (DTO JD23).	3000	0	0	0
Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - FY 06 - Continued program management and planning, documentation, Integrated Product Team (IPT) meetings, technical liaisons and transition planning. Continued Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing. Continued CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration. Conducted JCSD and CUGV operational demonstrations. Completed JCSD prototyping, technical testing and integration. Continued modification of the Joint Nuclear Biological Chemical Reconnaissance System (JNBCRS) shelter design, fabricated and integrated on High Mobility Multipurpose Wheeled Vehicles (HMMWVs). Continued Concepts-of-Operations (CONOPs) and techniques, tactics, and procedures (TTPs) development, and operational test planning. Program transitions in FY 07 to project TT4.	16927	0	0	0
Expeditionary Biological Detection (EBD) - FY 06 - Initiated Concepts-of-Operations (CONOPs) and techniques, tactics, and procedures (TTPs) development and operational test planning.	2033	0	0	0
Total	**21960**	**0**	**0**	**0**

C. <u>Other Program Funding Summary:</u> N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

D. Acquisition Strategy:

CPSP ACTD

This project is a generic block description for future ACTD and ATDs. The CUGR ACTD will execute its demonstration phase in FY06 and FY07. CUGR will transition laser detection technology into various reconnaissance vehicles that are currently in an Acquisition Program under Joint Program Executive Office (JPEO) Program Manager for Reconnaissance. The CBRN Unmanned Ground Vehicle (CUGV) will transition to the Joint CBRN Dismountable Reconnaissance System (JCDRS). The Expeditionary Biological Detection technologies will be transitioned to the Joint Program Manager (JPM) Biological Detection and the Joint Biological Tactical Detection System (JBTDS).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

Exhibit R-4a, Schedule Profile

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

D. Schedule Profile:

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
CPSP ACTD																																
CASPOD/CUGR JCSD Demonstration				4Q																												
CUGR JCSD Residual Support					1Q							4Q																				
CUGR CUGV Demonstration				4Q																												
CUGR CUGV Residual Support					1Q							4Q																				
Expeditionary Biological Detection ATD	1Q								1Q																							
Expeditionary Biological Detection Demonstration							3Q									4Q																
SPIDER							3Q						1Q																			
IBRD						2Q								2Q																		
ART													1Q											4Q								

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
DE4	DECONTAMINATION SYSTEMS (ACD&P)	989	1000	3093	7662	0	0	0	0	0	12744

A. Mission Description and Budget Item Justification:

Project DE4 DECONTAMINATION SYSTEMS (ACD&P): 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 which reduce operational impact and logistics burden, reduce sustainment costs, increase safety, and minimize environmental effects over currently fielded decontaminants.

This funding supports Joint Portable Decontamination System (JPDS), the Joint Platform Interior Decontamination (JPID) and Joint Service Transportable Decontamination System (JSTDS) programs.

JPDS will be used in immediate and operational decontamination operations and support thorough decontamination operations. JPDS will enhance decontamination capabilities by using the latest in technology to reduce or eliminate chemical, biological and toxic industrial material hazards in a safer and effective manner.

JPID will fill an immediate need to decontaminate chemical and biological warfare agents from vehicle/aircraft/buildings interiors, and associated cargo. JPID will develop two variants, the Joint Material Decontamination System - Tactical (JMDS-TAC) to decontaminate the interior of tactical ground vehicles and tactical aircraft and the Joint Material Decontamination System - Large Platform Interior (JMDS-LPI) to decontaminate the interior of large platforms (e.g., ships, large aircraft, buildings) and associated cargo. The JMDS-TAC and JMDS-LPI will include a JMDS wipe for removal of gross contamination.

JSTDS will be used in immediate and operational decontamination operations and support thorough decontamination operations.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT PORTABLE DECONTAMINATION SYSTEM	0	0	597	1967
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JPDS - FY 08 - Conduct Market Survey, analyze alternative contracting strategies. FY 09 - Prepare performance specifications, statement of work, solicitations, evaluate proposals and perform contract management.	0	0	100	900
JPDS - FY 08/09 - Perform programmatic, engineering, testing, logistics and risk management analysis. Coordinate with supporting Services to ensure that Service unique issues are addressed. Prepare documents to support Milestone B.	0	0	497	779
JPDS - FY 09 - Perform logistics and engineering analyses. Conduct technology readiness assessment, analyze alternative technical and logistic support approaches to support development of contracting strategy.	0	0	0	288
Total	**0**	**0**	**597**	**1967**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT PLATFORM INTERIOR DECONTAMINATION	0	0	2496	2727
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JPID - FY 08/09 - Initiate design of the Joint Material Decontamination System (JMDS) - Tactical (TAC) and JMDS-Large Platform Interior (LPI).	0	0	2496	2727
Total	**0**	**0**	**2496**	**2727**

	FY 2006	FY 2007	FY 2008	FY 2009
JS FAMILY OF DECON SYSTEMS (JSFDS)	989	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSFDS (T&E Capability) - FY 06 - Overarching Decontamination Model throughout RDT&E - Developed a model to predict contamination-caused hazards for all phases of chemical and biological threats.	204	0	0	0
JSFDS (T&E Capability) - FY 06 - Developed and validated chemical decontamination test methods for full-system tests.	785	0	0	0
Total	**989**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT SERVICE TRANSPORTABLE DECONTAMINATION SYSTEM - LA	0	0	0	2968
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSTDS-LS - FY 09 - Initiate Integrated Product Team (IPT) to develop JSTDS-LS.	0	0	0	1120
JSTDS-LS - FY 09 - Initiate design of JSTDS-LS.	0	0	0	766
JSTDS-LS - FY 09 - Prepare documentation for contract support and award.	0	0	0	1082
Total	**0**	**0**	**0**	**2968**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT SERVICE TRANSPORTABLE DECONTAMINATION SYSTEM - SM	0	991	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSTDS SS#1 - Congressional Interest Item - FY 07 - M291 Skin Decontamination Kit.	0	991	0	0
Total	**0**	**991**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	9	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	9	0	0
Total	**0**	**9**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
DE5 DECONTAMINATION SYSTEMS (SDD)	15357	11010	6019	10300	23791	19094	16945	12811	Cont	Cont
JD0055 JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM (JSPDS)	0	11542	13011	0	0	0	0	0	0	24553
JD0056 JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)	2911	7176	15628	22161	30474	34835	40346	17992	Cont	Cont
JD0058 JOINT PORTABLE DECONTAMINATION SYSTEM (JPDS)	0	0	0	0	0	4002	5014	4322	Cont	Cont
JD0060 JOINT PLATFORM INTERIOR DECONTAMINATION (JPID)	0	0	0	0	0	0	15102	31442	Cont	Cont
JD0061 JOINT SERVICE SENSITIVE EQUIPMENT DECON (JSSED)	0	0	0	5720	8837	8452	19915	23000	Cont	Cont
JD0062 HUMAN REMAINS DECON SYSTEM	0	0	0	0	1000	3458	3110	5000	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

D. Acquisition Strategy:

JPID	The Joint Platform Interior Decontamination Program will be acquired as part of an overarching Joint Material Decontamination System (JMDS) evolutionary acquisition strategy, which covers both the JPID and Joint Service Sensitive Equipment Decontamination (JSSED) programs. This strategy uses a single technology I to meet the sensitive equipment and platform interior requirements. JMDS variants will be implemented in phases to leverage off lessons learned in the development process and to expand the capabilities to meet the different operational requirements. Each design is based off previous effort expanded to meet different operational requirements. A JMDS wipe for removal of gross contamination will be included as an accessory for each of the JMDS variants.
JSFDS	The JSFDS program will use an evolutionary acquisition strategy with spiral development. This allows the program to leverage existing commercial products to provide an initial capability. The initial capability will be enhanced through product modifications and technology insertion to further enhance the warfighter's fixed site, equipment and personnel decontamination capability.
JSTDS SS	The JSTDS Small-Scale program is implementing an evolutionary acquisition strategy using incremental and spiral development. Increment 1 will focus largely upon fielding hardware systems that improve upon the capability of the M17 Lightweight Decontamination System.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPID													
HW C - JMDS TAC and LPI design	C/FPI	TBD	C	0	0	NONE	1840	1Q FY08	1891	1Q FY09	0	3731	0
JSTDS LS													
HW S - JSTDS-LS - System design review.	WR	Various	U	0	0	NONE	0	NONE	766	2Q FY09	0	766	0
JSTDS SS													
JSTDS SS#1 - M291 Skin Decontamination Kit	SS/FP	TBD	C	0	991	4Q FY07	0	NONE	0	NONE	0	991	0
Subtotal I. Product Development:					991		1840		2657		0	5488	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPDS													
ILS S - JPDS Logistics Planning	C/FFP	Various	C	0	0	NONE	80	2Q FY08	160	2Q FY09	0	240	0
ILS S - JPDS Logistics Planning	MIPR	Various	U	0	0	NONE	80	1Q FY08	320	1Q FY09	0	400	0
ES S - JPDS Market Survey	C/FFP	TBD	C	0	0	NONE	100	2Q FY08	0	NONE	0	100	0
JSTDS LS													
ES S - JSTDS engineering support	C/FPI	TBD	C	0	0	NONE	0	NONE	1082	2Q FY09	0	1082	0
Subtotal II. Support Costs:					0		260		1562		0	1822	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPDS													
DTE S - JPDS Developmental Test Planning	C/FFP	Various	C	0	0	NONE	147	2Q FY08	500	2Q FY08	0	647	0
OTE S - JPDS Operational Test Planning	MIPR	Army Test and Evaluation Command, Alexandria VA	U	0	0	NONE	50	1Q FY08	500	1Q FY09	0	550	0
Subtotal III. Test and Evaluation:					0		197		1000		0	1197	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPDS													
PM/MS S - JPDS Program Office Support	C/FFP	Various	C	0	0	NONE	80	2Q FY08	287	2Q FY09	0	367	0
PM/MS S - JPDS Program Office Staff/Management	MIPR	Various	U	0	0	NONE	60	1Q FY08	200	1Q FY09	0	260	0
JPID													
PM/MS S - JMDS TAC NA D LPI	MIPR	TBD	U	0	0	NONE	656	1Q FY08	836	1Q FY09	0	1492	0
JSTDS LS													
PM/MS S - JSTDS program support	MIPR	Various	U	0	0	NONE	0	NONE	1120	1Q FY09	0	1120	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	9	NONE	0	NONE	0	NONE	0	9	0
Subtotal IV. Management Services:					9		796		2443		0	3248	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

TOTAL PROJECT COST:		1000		3093		7662		0	11755	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
DE4

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JPDS																																
Market Survey										2Q																						
Solicitation release and review													1Q	—	3Q																	
Milestone B																4Q																
JSTDS LS																																
JSTDS-LS RFP Release													1Q																			
JSTDS-LS Paper Down-selection														2Q																		
JSTDS-LS MS B														2Q																		
JSTDS-LS Down-selection Testing (DT I)															3Q	4Q																
JSTDS SS																																
Shelf Life Extension Test					1Q	—	—	4Q																								

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IS4	INFORMATION SYSTEMS (ACD&P)	3275	0	0	0	0	0	3591	4846	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project IS4 INFORMATION SYSTEMS (ACD&P): This Advanced Component Development and Prototypes (ACD&P) funding supports Component Advanced Development and System Integration (CAD/SI).

The Joint Program Executive Office - Chemical and Biological Defense (JPEO-CBD) Software Support Activity (SSA) is a JPEO-CBD user developmental support and service organization supporting all JPMs and JPEO-CBD Directorates, and providing enterprise-wide services and coordination to facilitate net-centric interoperability. The SSA will provide the CBRN Warfighter with Joint service solutions for 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 Warfighters 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 Program

	FY 2006	FY 2007	FY 2008	FY 2009
SOFTWARE SUPPORT ACTIVITY	304	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SSA - FY 06 - Assisted JPEO-CBD programs. Implemented the Enterprise Technical C4I architecture. Analyzed requirements and assisted programs with implementation of the CBRN Data Model. Supported CBRN Data Model updates. Provided information assurance compliance testing for JPEO-CBD programs. Provided enterprise modeling, simulation, verification, validation and accreditation support. Provided ISP development support for JPEO-CBD programs. Provided science and technology transition support and demonstration. Provided developmental support for JPEO-CBD programs and users.	304	0	0	0
Total	**304**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
TECHNOLOGY TRANSFER FOR BIO SENSORS	2971	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06 - E-Smart Threat Agent Network for Liberty Island.	2971	0	0	0
Total	**2971**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	6112	6517	6744	6944	6628	7000	8200	5679	Cont	Cont
IS5 INFORMATION SYSTEMS (SDD)	74728	24951	47465	39453	27610	17652	14893	25293	Cont	Cont
IS6 INFORMATION SYSTEMS (RDT&E MGT SUPPORT)	1493	1527	0	0	0	0	0	0	0	3020
IS7 INFORMATION SYSTEMS (OP SYS DEV)	0	0	700	918	1349	1910	1761	1612	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	1996	2050	3534	4394	0	0	0	0	0	11974
JC0209 JOINT OPERATIONAL EFFECTS FEDERATION (JOEF)	0	0	3611	3328	3523	0	0	0	0	10462

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

D. Acquisition Strategy:

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].

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].

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
SSA																																
Establish SSA Charter, Management Plans, Processes, Procedures	>>	2Q																														

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MB4	MEDICAL BIOLOGICAL DEFENSE (ACD&P)	26346	2600	0	0	122592	139754	133939	134012	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P): This project funds the Advanced Component Development and Prototypes (ACD&P) phase of vaccines, drugs, and diagnostic medical devices that are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. The results of these efforts, and those conducted during the System Development and Demonstration (SDD) phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. Upon FDA licensure, the product will transition to full-scale licensed production. Products to be developed under this program include Venezuelan Equine Encephalitis, Recombinant Botulinum and Plague vaccines.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
TECHNOLOGY TRANSFER FOR BIO SENSORS	2526	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06 - Roll-on-Roll-Off Infection Control Facility.	2526	0	0	0
Total	**2526**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

	FY 2006	FY 2007	FY 2008	FY 2009
BOTULINUM VACCINE	15828	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JVAP - FY 06 - Recombinant Botulinum Vaccine - Continued non-clinical studies.	3542	0	0	0
JVAP - FY 06 - Recombinant Botulinum Vaccine - Continued large scale process validation.	8089	0	0	0
JVAP - FY 06 - Recombinant Botulinum Vaccine - Initiated planning for Phase 1B clinical trial.	4197	0	0	0
Total	**15828**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
ENCEPHALITIS VACCINE	6810	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JVAP - FY 06 - Equine Encephalitis Vaccine - Continued manufacturing process development.	2677	0	0	0
JVAP - FY 06 - Equine Encephalitis Vaccine - Continued Phase 1 clinical trial on the VEE 1 AB vaccine.	4133	0	0	0
Total	**6810**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

	FY 2006	FY 2007	FY 2008	FY 2009
PLAGUE VACCINE	1182	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JVAP - FY 06 - Plague Vaccine - Continued Phase 1 clinical trial and non-clinical studies of US candidate.	682	0	0	0
JVAP - FY 06 - Plague Vaccine - Continued large scale process development.	400	0	0	0
JVAP - FY 06 - Plague Vaccine - Completed MS B and transitioned to SDD.	100	0	0	0
Total	**1182**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
BIOLOGICAL VACCINES	0	2575	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
VACCINES #5 - Congressional Interest Item - FY 07 - Oral Anthrax/Plague Vaccine.	0	2575	0	0
Total	**0**	**2575**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	25	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	25	0	0
Total	**0**	**25**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
JM0001 JOINT BIO AGENT IDENTIFICATION AND DIAGNOSTIC SYS (JBAIDS)	12504	5710	4934	483	0	0	0	0	0	23631
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	45809	38917	48627	47134	54847	54639	60495	61031	Cont	Cont
JX0210 CRITICAL REAGENTS PROGRAM (CRP)	2192	2297	2430	0	0	0	0	0	0	6919
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	49964	67358	69039	65396	57561	160884	143432	142500	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

D. Acquisition Strategy:

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 thru FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. Other serotypes will be developed thru an evolutionary approach, as funding becomes available.

The management lead for the program shifted to JVAP at MS A. The technology development stage includes the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine is evaluated for safety and immunogenicity in a small human trial (Phase 1).

During the System Development and Demonstration phase (SDD), the 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 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 "Animal Rule." The Milestone C, also the Low Rate Initial Production (LRIP) decision, will be conducted after the manufacturing process has been validated, consistency lots have been produced, and interim safety data is available from the Phase 3 clinical trial. 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 ENC

The management lead for the program shifted to CBMS at MS A. The technology development stage includes the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine is evaluated for safety and immunogenicity in a small human trial.

VAC PLG

The current budget supports development thru FDA licensure of a plague vaccine.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

Chemical Biological Medical Systems (CBMS) is mitigating technical program risk in the Plague Vaccine Program by temporarily supporting development of both a US vaccine candidate and a United Kingdom (UK) vaccine candidate. The US candidate is managed by JVAP's prime systems contractor and the UK candidate is managed thru a Project Arrangement (PA) with Canada and the UK. Both vaccines will be developed thru an event-driven down-select decision which is after a Phase 2-like clinical trial (Phase 1b for the UK - funded thru a contract with the National Institute of Allergy and Infectious Diseases (NIAID) - and Phase 2a for the US). The information from this trial and other supporting non-clinical information will be used to determine if the vaccines can meet the Capabilities Development Document (CDD) threshold duration of protective immunity - one year after completion of primary series. Following down-select in 2008, the US will fund a single plague vaccine candidate thru FDA licensure. The dates listed in the "SCHEDULE" are primarily for the US candidate, as only the manufacturing scale up and validation efforts for the UK candidate have been funded thru the Project Arrangement.

The management lead for the program shifted to JVAP at MS A. The technology development stage 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 System Development and Demonstration phase (SDD), 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, consistency lots have been produced, and interim safety data is available from the Phase 3 clinical trial. 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

VACCINES

Anthrax Vaccine Absorbed (AVA) and Vaccinia Immune Globulin (VIG) are procured as Commercial off-the-shelf (COTS) products directly from the manufacturer. Smallpox is currently procured thru an Interagency Agreement (IAA) with the Centers for Disease Control (CDC).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VACCINES													
VACCINES #5 - Oral Anthrax/Plague Vaccines	SS/FP	TBD	C	0	2575	4Q FY07	0	NONE	0	NONE	0	2575	0
Subtotal I. Product Development:					2575		0		0		0	2575	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	25	NONE	0	NONE	0	NONE	0	25	0
Subtotal IV. Management Services:					25		0		0		0	25	
TOTAL PROJECT COST:					2600		0		0		0	2600	

Remarks:

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

D. Schedule Profile:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
VAC BOT								
Non-Clinical Testing	>>					4Q		
Process Validation - Large Scale	>>			2Q				
Phase 1 Clinical Trial (A/B)	>>			2Q				
Milestone B			3Q					
VAC PLG								
Non-Clinical Studies (US Candidate)	>>			3Q				
Phase 1 Clinical Trial (US Candidate)	>>	2Q						
Process Development - Large Scale (US Candidate)	>>	3Q						
Milestone B (US Candidate)	3Q							

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MC4	MEDICAL CHEMICAL DEFENSE (ACD&P)	24809	37508	14529	4446	0	0	0	0	0	81292

A. Mission Description and Budget Item Justification:

Project MC4 MEDICAL CHEMICAL DEFENSE (ACD&P): This project funds Technology Development of countermeasures for chemical agents including life support equipment, diagnostic equipment, prophylactic and therapeutic drugs, and individual/casualty decontamination compounds. A system of medical defense against chemical agents is required to provide protection, to sustain performance in a chemical environment, and to provide for self-aid and medical treatment of chemical casualties. Fielding of prophylactic and therapeutic drugs requires Food and Drug Administration (FDA) approval. Multiple long-term studies are required to obtain FDA approval resulting in longer program timelines and greater program cost than other non-pharmaceutical product programs. Efficacy testing of most candidate drugs against chemical warfare (CW) agents cannot be conducted in humans; therefore, animal surrogate models must be developed. The program currently funds the: (1) Advanced Anticonvulsant System (AAS), which will be used as a treatment for seizures from exposure to nerve agents; (2) Improved Nerve Agent Treatment System (INATS), which will be used as a treatment for nerve agent intoxication to include new indications for Pyridostigmine Bromide (PB) that will be integrated with current therapeutic regimens; (3) Plasma-derived Bioscavenger (pBSCAV) and Bioscavenger Increment 2 (BSCAV Inc. 2), which will be used as a prophylaxis against nerve agents; (4) Field Aerosolized Atropine Increment 2 (DPIA) (Congressionally-directed effort), which will be used as the replacement for the existing Medical Aerosolized Nerve Agent Antidote (MANAA); and (5) Chemical Surety Facility, which will be used to test and evaluate medical chemical defense products utilizing chemical agents under Good Laboratory Practices (GLP) conditions.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
ADVANCED ANTICONVULSANT SYSTEM	1505	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
AAS - FY 06 - Completed non-Good Laboratory Practices (GLP) pre-clinical safety studies.	592	0	0	0
AAS - FY 06 - Completed and submitted Investigational New Drug (IND) application.	236	0	0	0
AAS - FY 06 - Completed Phase 1 clinical safety studies.	597	0	0	0
AAS - FY 06 - Continued process development and current Good Manufacturing Practices (cGMP) requirements. Transitioned to System Development and Demonstration (SDD) phase.	80	0	0	0
Total	**1505**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
BIOSCAVENGER	14128	27739	14529	4446
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
pBSCAV - FY 06 - Completed and submitted IND application.	800	0	0	0
pBSCAV - FY 06 - Initiated and completed pre-clinical safety studies.	500	0	0	0
pBSCAV - FY 06/07 - Continue and complete small scale manufacturing, process development, and assay qualification.	3715	4003	0	0
pBSCAV - FY 06/07 - Initiate and complete Phase 1 clinical safety studies.	2510	2810	0	0
Chemical Surety Facility - FY 06/07/08/09 - Continue test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility.	267	271	284	295

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
BSCAV Increment 2 - FY 06/07/08 - Initiate and complete small scale manufacturing, process development, assay qualification, and test/evaluate medical defense products against traditional and non-traditional agents.	4226	8727	1748	0
BSCAV Increment 2 - FY 06 - Initiated pre-clinical safety studies and achieved Milestone A. FY 07 - Complete pre-clinical safety studies.	2110	3302	0	0
BSCAV Increment 2 - FY 07 - Initiate IND application. FY 08 - Complete and submit IND application.	0	853	258	0
BSCAV Increment 2 - FY07/08/09 - Initiate and complete Phase 1 clinical safety studies and achieve Milestone B.	0	7773	8519	1273
BSCAV Increment 2 - FY08 - Initiate large scale manufacturing, process development, and assay validation. FY09 - Continue large scale manufacturing, process development, and assay validation. Transition to SDD phase.	0	0	3720	2878
Total	**14128**	**27739**	**14529**	**4446**

	FY 2006	FY 2007	FY 2008	FY 2009
FIELD AEROSOLIZED ATROPINE INC 2	3257	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Field Aerosolized Atropine Increment 2 (DPIA) - Congressional Interest Item - FY 06 - Formulation and device development efforts to replace the Medical Aerosolized Nerve Agent Antidote (MANAA).	3257	0	0	0
Total	**3257**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

	FY 2006	FY 2007	FY 2008	FY 2009
IMPROVED NERVE AGENT TREATMENT SYSTEM	5919	9404	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
INATS - FY 06/07 - Continue GLP pre-clinical safety studies.	1445	2776	0	0
INATS - FY 06/07 - Continue process development and cGMP manufacturing requirements.	1445	2483	0	0
INATS - FY 06/07 - Continue Phase 1 clinical safety studies.	2569	942	0	0
INATS - FY 06 - Continued IND application effort. FY 07 - Continue IND application effort. Transition to SDD phase.	460	275	0	0
INATS - FY 07 - Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	2928	0	0
Total	**5919**	**9404**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	365	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	365	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Total	**0**	**365**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	2406	6391	21348	26106	16306	18897	17740	12173	Cont	Cont

D. Acquisition Strategy:

AAS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office and/or a commercial partner will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the system integrator to ensure that products are manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines, appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted, and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

BSCAV

Bioscavenger is a developmental program with three distinct increments. Increment 1 is based on butyrylcholinesterase purified from human plasma, i.e., plasma-derived Bioscavenger or pBioscavenger. Medical Identification and Treatment Systems (MITS) Joint Product Management Office exercises management oversight and a commercial partner serves as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. The Department of Health and Human Services (DHHS) may consider transition of this product for further development using BioShield funds after the Phase 1 clinical study is completed.

Bioscavenger Increment 2 will initially look at two different technologies that bind and sequester nerve agents. The down-selection to one of the technologies will occur following the Phase 1 human clinical safety study. MITS Joint Product Management Office exercises management oversight and commercial partners to serve as system integrators for their respective candidate products during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. Contracts have been awarded for both technologies, and there will be a down-selection to one Bioscavenger product at Milestone B. The plasma-derived Bioscavenger will be considered in the down selection. After Milestone B, during the System Development and Demonstration Phase, MITS will continue to exercise management oversight and the selected commercial partner will serve as the system integrator to ensure that: the selected product is manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines; appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted; and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained, and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

Bioscavenger Increment 3 will be based on a product that degrades nerve agents while retaining its own activity.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

DPIA

Medical Identification and Treatment Systems (MITS) Joint Product Management Office will manage the Congressionally-directed development of Field Aerosolized Atropine Increment 2 (Dry Powder Inhaler Atropine (DPIA)) for the DoD. The contractor will serve as the product integrator throughout development, and shall be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA), including human clinical safety and pharmacokinetic studies. The contractor shall sponsor the drug to the FDA and hold all approvals and/or licenses.

INATS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office and/or a commercial partner will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the system integrator to ensure that products are manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines, appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted, and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
pBSCAV - Small Scale Manufacturing	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	3598	2951	1Q FY07	0	NONE	0	NONE	0	6549	0
BSCAV Inc 2 - Small Scale and Large Scale Manufacturing	C/CPIF	PharmAthene, Inc., Annapolis, MD; SRI, Menlo Park, CA	C	2041	8263	1Q FY07	4359	2Q FY08	1467	2Q FY09	0	16130	0
INATS													
INATS - Pilot Lot & Small-Scale Manufacturing	C/CPIF	Southwest Research Institute, San Antonio, TX	C	454	1943	2Q FY07	0	NONE	0	NONE	0	2397	0
Subtotal I. Product Development:					13157		4359		1467		0	25076	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
pBSCAV - Regulatory Integration, Quality Assurance, & IND Support Efforts	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	674	1022	1Q FY07	0	NONE	0	NONE	0	1696	0
BSCAV Inc 2 - Regulatory Integration, IND, and NDA Support Efforts	C/CPIF	PharmAthene, Inc., Annapolis, MD; SRI, Menlo Park, CA	C	911	2000	3Q FY07	1907	2Q FY08	667	3Q FY09	0	5485	0
INATS													
INATS - Regulatory Integration, IND, and NDA Support Efforts	C/CPIF	Southwest Research Institute, San Antonio, TX	C	0	971	2Q FY07	0	NONE	0	NONE	0	971	0
Subtotal II. Support Costs:					3993		1907		667		0	8152	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
pBSCAV - Conduct Pre-Clinical and Phase 1 Clinical Safety Studies	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	3228	2144	1Q FY07	0	NONE	0	NONE	0	5372	0
BSCAV Inc 2 - Conduct Pre-Clinical and Phase 1 Clinical Safety Studies	C/CPIF	PharmAthene, Inc., Annapolis, MD; SRI, Menlo Park, CA	C	1558	8562	3Q FY07	6177	2Q FY08	1173	2Q FY09	0	17470	0
CSF - Test & Evaluation of Med Chem Products Under GLP Conditions	MIPR	USAMRAA, Fort Detrick, MD	U	267	271	2Q FY07	284	2Q FY08	295	2Q FY09	0	1117	0
INATS													
INATS - Conduct Pre-Clinical, Non-Clinical and Phase 1 Clinical Safety Studies	MIPR	USAMRAA, Fort Detrick, MD & CBIAC, Edgewood, MD	U	2009	2634	2Q FY07	0	NONE	0	NONE	0	4643	0
Subtotal III. Test and Evaluation:					13611		6461		1468		0	28602	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
PM/MS S - BSCAV - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	1253	1179	1Q FY07	1047	1Q FY08	540	1Q FY09	0	4019	0
PM/MS S - BSCAV - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	509	1248	4Q FY07	654	4Q FY08	200	4Q FY09	0	2611	0
PM/MS S - BSCAV - Program Management Support	MIPR	USAMMDA, Fort Detrick, MD	U	89	99	1Q FY07	101	1Q FY08	104	1Q FY09	0	393	0
INATS													
PM/MS S - INATS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	310	319	1Q FY07	0	NONE	0	NONE	0	629	0
PM/MS S - INATS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	120	2928	4Q FY07	0	NONE	0	NONE	0	3048	0
PM/MS S - INATS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	220	470	4Q FY07	0	NONE	0	NONE	0	690	0
PM/MS S - INATS - Program Management Support	MIPR	USAMMDA, Fort Detrick, MD	U	0	139	1Q FY07	0	NONE	0	NONE	0	139	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	365	NONE	0	NONE	0	NONE	0	365	0
Subtotal IV. Management Services:					6747		1802		844		0	11894	

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

IV. Management Services - Cont.

Remarks:

TOTAL PROJECT COST:		37508		14529		4446		0	73724	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

D. Schedule Profile:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
AAS								
AAS - Non-GLP Pre-Clinical Safety Studies	>> — 4Q							
AAS - Investigational New Drug (IND) Application	>> — 3Q							
AAS - Phase 1 Clinical Safety Study	>> — 4Q							
AAS - cGMP Manufacturing Requirements	>> —	—	—	—	—	1Q		
AAS - Milestone B		2Q						
BSCAV								
pBSCAV - Small Scale Manufacturing, Process Dev, Assay Validation Efforts	>> —	1Q						
pBSCAV - IND Application	>> — 3Q							
pBSCAV - Pre-Clinical Safety Studies	1Q — 3Q							
pBSCAV - Phase 1 Clinical Safety Study	4Q	— 4Q						
CSF - Maintain Chemical Surety Facility	>> —	—	—	—	—	— 4Q		
BSCAV Inc. 2 - Milestone A	2Q							
BSCAV Inc. 2 - Small Scale Manufacturing	4Q	—	— 4Q					

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
BSCAV (Cont)																																
BSCAV Inc. 2 - Pre-Clinical Safety Studies				4Q				4Q																								
BSCAV Inc. 2 - IND Application					1Q				1Q																							
BSCAV Inc. 2 - Phase 1 Clinical Safety Studies								4Q					2Q																			
BSCAV Inc. 2 - Large Scale Manufacturing, Process Qualification & Validation									1Q																			4Q				
BSCAV Inc. 2 - Milestone B													2Q																			
INATS																																
INATS - GLP Pre-Clinical Safety Studies	>>								2Q																							
INATS - Process Development and cGMP Manufacturing Requirements	>>																										2Q					
INATS - Phase 1 Clinical Safety Studies	>>												2Q																			
INATS - IND Application	>>											4Q																				
INATS - Milestone B													2Q																			

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MR4	MEDICAL RADIOLOGICAL DEFENSE	0	8967	7117	3321	0	0	0	0	0	19405

A. Mission Description and Budget Item Justification:

Project MR4 MEDICAL RADIOLOGICAL DEFENSE: This project funds the advanced development of candidate therapeutic and/or prophylactic medical countermeasures to mitigate the consequences of exposure to ionizing radiation due to nuclear or radiological attacks. Exposure to ionizing radiation causes damage to the blood-forming cells (hematopoietic system) and gastrointestinal system, leading to Acute Radiation Syndrome (ARS). Development and fielding of prophylactic and therapeutic drugs require Food and Drug Administration (FDA) approval. 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. This project allows the joint force to operate safely, over the long term, and at near normal levels of effectiveness while in a contaminated environment.

Medical Radiation Countermeasures (MRADC) efforts include multiple countermeasures required to restore casualties to pre-exposure health to protect U. S. Forces against injury caused by exposure to radiation. 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 in the battle space, including during evacuation.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
MEDICAL RADIOLOGICAL COUNTERMEASURES	0	8881	7117	3321
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
MRADC - FY 07 - Initiate process development and current Good Manufacturing Practices (cGMP) manufacturing requirements, Investigational New Drug (IND) application efforts, and achieve Milestone A. FY08 - Complete process development and cGMP manufacturing requirements, and submit IND application.	0	5029	2960	0
MRADC - FY 07/08 - Initiate and complete pre-clinical safety and toxicology studies.	0	1870	2817	0
MRADC - FY 08 - Initiate Phase 1 clinical safety studies. FY 09 - Complete Phase 1 clinical safety studies. Achieve Milestone B and transition to System Development and Demonstration (SDD) phase.	0	0	1340	3321
MRADC - Congressional Interest Item - FY 07 - Medical Radiation Countermeasures #1, development of candidate therapeutic and/or prophylactic medical countermeasures.	0	991	0	0
MRADC - Congressional Interest Item - FY 07 - Medical Radiation Countermeasures #2, development of adult-derived hematopoietic progenitor cells to treat Acute Radiation Syndrome.	0	991	0	0
Total	**0**	**8881**	**7117**	**3321**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	86	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	86	0	0
Total	**0**	**86**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
MR5 MEDICAL RADIOLOGICAL DEFENSE	0	0	0	7867	8515	9460	5083	2404	Cont	Cont

D. Acquisition Strategy:

MRADC

Medical Identification and Treatment Systems (MITS) Joint Product Management Office will manage the development of Medical Radiation Countermeasures (MRADC) for the DoD. A contractor will serve as the product integrator throughout development, and 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. The Technology Development Phase includes pre-clinical studies and Phase 1 human clinical safety studies. During the System Development and Demonstration (SDD) Phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the SDD phase. During Production and Deployment Phase, sufficient quantities of product to meet Initial Operating Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance requested by the FDA will be conducted. MRADC will be developed using a system-of-systems approach to address the multiple organ systems affected by radiation exposure. Individual countermeasure solutions will be developed using a single step to full capability (FDA approval). The DoD MRADC program shall be non-duplicative of and synergistic with similar efforts by the Department of Health and Human Services (DHHS).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Process Development & cGMP Manufacturing	C/CPIF	TBD	C	0	4995	3Q FY07	2847	2Q FY08	0	NONE	0	7842	0
MRADC - Congressional Interest Item #1	SS/FFP	TBD	C	0	991	4Q FY07	0	NONE	0	NONE	0	991	0
MRADC - Congressional Interest Item #2	SS/FFP	TBD	C	0	991	4Q FY07	0	NONE	0	NONE	0	991	0
Subtotal I. Product Development:					6977		2847		0		0	9824	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Regulatory Integration Support Efforts	C/CPIF	TBD	C	0	445	3Q FY07	811	2Q FY08	498	2Q FY09	0	1754	0
Subtotal II. Support Costs:					445		811		498		0	1754	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Pre-clinical, Toxicology & Phase 1 Clinical Safety Studies	C/CPIF	TBD	C	0	1098	3Q FY07	2581	2Q FY08	2345	2Q FY09	0	6024	0
Subtotal III. Test and Evaluation:					1098		2581		2345		0	6024	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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PROJECT
MR4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
PM/MS S - MRADC - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	159	1Q FY07	238	1Q FY08	179	1Q FY09	0	576	0
PM/MS S - MRADC - Chem Bio Medical Systems	Allot	CBMS, Fort Detrick, MD	U	0	202	4Q FY07	356	4Q FY08	166	4Q FY09	0	724	0
PM/MS S - MRADC - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	284	4Q FY08	133	4Q FY09	0	417	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	86	NONE	0	NONE	0	NONE	0	86	0
Subtotal IV. Management Services:					447		878		478		0	1803	
TOTAL PROJECT COST:					8967		7117		3321		0	19405	

Remarks:

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MR4

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
MRADC																																
MRADC - Milestone A						2Q																										
MRADC - Process Development and cGMP Small Scale Manufacturing							3Q	—	—	—	3Q																					
MRADC - Pre-Clinical Safety and Toxicology Studies							3Q	—	—	—	3Q																					
MRADC - IND Application							3Q	—	—	—	3Q																					
MRADC - Phase 1 Clinical Safety Studies											3Q	—	—	—	—	4Q																
MRADC - Milestone B																4Q																

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TE4	TEST & EVALUATION (ACD&P)	17776	1992	14049	6407	5646	5497	11944	30028	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TE4 TEST & EVALUATION (ACD&P): This funding supports the Product Director Test Equipment, Strategy, and Support (PD TESS) effort. PD TESS provides support for the Milestone Decision Authority, Joint Project Managers, and the Test and Evaluation (T&E) community with the development of test capabilities to adequately test and evaluate Chemical, Biological, Radiological, and Nuclear Defense systems throughout the life cycle acquisition process.

Efforts funded under PD TESS support the following five major areas: (1) Sense Laboratory (Chemical), (2) Sense Laboratory (Biological), (3) Sense Field, (4) Shield and Sustain, and (5) Shape.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

(1) Sense Laboratory (Chemical): The Sense (Chem) development effort provides a new capability to the Edgewood Chemical Biological Center (ECBC) to conduct tests involving new and emerging highly toxic threat materials. The test capability will support tests of various commodity areas (such as decontamination, collective protection and individual protection, and contamination avoidance (detection) technologies and systems for the Department of Defense and other government agencies. The Acquisition Programs supported by this effort will be the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA); the Joint NBC Reconnaissance System (JNBCRS) Sensors; the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker Sensors; the Joint Service General Purpose Mask (JSGPM); the Joint Service Lightweight Integrated Suit Technology (JSLIST); the Joint Expeditionary Collective Protection (JECP); the Joint Collective Protection Equipment (JCPE); the Joint Service Tactical Decontamination System (JSTDS); the Joint Service Sensitive Equipment Decontamination (JSSED); the Joint Warning and Reporting Network (JWARN) hardware components; the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Protective Air Crew Ensemble (JPACE); the JSLIST Combat Vehicle Crewman Coverall (JC3); Multipurpose Lightweight Overboot (MULO); the Advanced Footwear Solution (AFS); the Initial Footwear Solution (IFS); the JSLIST Block I Glove Upgrade (JB1GU); the JSLIST Block II Glove Upgrade (JB2GU); the Chemical & Biological Protective Shelter (CBPS); the Collective Protection System (CPS); the Joint Service Aircrew Mask (JSAM); the Joint Service Chemical Environment Survivability Mask (JSCESM); the Joint Chemical Ensemble (JCE); and the All Purpose - Personal Protective Equipment (AP-PPE).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

(2) Sense Laboratory (Biological): The Sense (Bio) development effort supports current and future biological point detection system programs; develops a single unit of measure for characterizing biological aerosols in testing; designs and fabricates a live agent Biological Standoff facility; and develops a biological spectral instrument which measure spectral signatures and cross sections of biological warfare agents and stimulant materials. The Acquisition Programs supported by this effort will be the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Point Detection System (JBPDS) / JBPDS Block II; the Joint Biological Tactical Detection System (JBTDS); the Joint Biological Standoff Detection System (JBSDS); the Joint NBC Reconnaissance System (JNBCRS); and the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker.

(3) Sense Field: The Sense Field capability provides the Test Grid and Data Network, a fully instrumental CB stimulant field test capability to include cloud tracking, Test Data Network, C4ISR network, and safari capability; a Spectroradiometer effort which procures two Adaptive Infrared Imaging Spectroradiometers - Wide Area Detector (AIRIS-WAD) to complement a Joint Science and Technology Office effort; and the Joint Ambient Breeze Tunnel and Active Standoff Chamber (JABT/ASC) upgrade which provides test instrumentation and fully characterizes and validates JABT/ASC chamber performance. The Acquisition Programs supported by this effort will be the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA) Variants; the Joint NBC Reconnaissance System (JNBCRS); the Joint Warning and Reporting Network (JWARN); the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Standoff Detection System (JBSDS); the Joint Biological Point Detection System (JBPDS); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker; the Joint Effort Model (JEM); the Joint Operational Effects Federation (JOEF); and the Joint Expeditionary Collective Protection (JECP).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

(4) Shield and Sustain: The Shield and Sustain capability provides the Upgraded Decontamination Facility (UDF), an enhanced ability to conduct decontamination efficacy testing thru the use of a test apparatus that includes separate containment chambers to support small-scale contamination, decontamination, and off-gassing/residual agent collection test procedures; the Protection Ensemble Test Mannequin (PETMAN) program which designs and procures articulated robotic mannequins that simulate soldier activity to allow for full system evaluation of individual protection ensembles against chemical warfare agents and non-traditional agents; the Man-in-Simulant Test (MIST) Upgrade program which includes two improved test capability development efforts. The first is the development of a real-time simulant sampling system and associated test methodology. The second is the development of test equipment and methodology that allows for simultaneous particulate quantification of various particle sizes to support aerosol (stimulant) level tests; the Liquid Chromatograph and Gas Chromatograph (LC/GC) effort, procures analytical testing equipment for low-level detection of CW agents in support of decontamination programs. This test capability will provide improved characterization of residual contamination to support evaluation of decontamination efficacy of decontamination systems; the Individual Protection Ensemble (IPE) Grid program develops methodology for assigning locations to the body and each successive layer of IPE to provide a commonality of measurements for IPE performance assessment. A common sample location identification system is needed to equate data collected by various test protocols, to provide a means to ensure data is collected from the same location for each testing cycle at each testing location, and to joint data from several testing scenarios; the Collective Protection Airflow Mapping (CPAFM) program develops capabilities to measure, map, and model the airflow, barometric pressure and agent flux of the Collective Protection (ColPro) systems, both internally and externally, as a function of time. The program provides enhanced test and evaluation tools to allow fielding of significantly more effective ColPro systems for the warfighter. The enhancement will be achieved by using airflow mapping capabilities to identify ColPro design problems that reduce protection factors and allow contamination to enter the protected area; and the ColPro Facility Upgrade effort provides improved test fixtures and instrumentation to evaluate ColPro systems and components to include air purification systems and novel closures. Standardized test procedures will be developed to allow for comparison of test data across facilities. The Acquisition Programs supported by this effort will be the Joint Sensitive Equipment Decontamination (JSSED); the Joint Platform Interior Decontamination (JPID); the Joint Expeditionary Collective Protection (JECP); the Joint Collective Protection Equipment (JCPE); the Chemical & Biological Protective Shelter (CBPS); the Collective Protection System (CPS); the Joint Service Lightweight Integrated Suit Technology (JSLIST); the Joint Protective Air Crew Ensemble (JPACE); the JSLIST Combat Vehicle Crewman Coverall (JC3); the Multipurpose Lightweight Overboot (MULO); the Advanced Footwear Solution (AFS); the Initial Footwear Solution (IFS); the JSLIST Block I Glove Upgrade (JB1GU); the JSLIST Block II Glove Upgrade (JB2GU); the Joint Service General Purpose Mask (JSGPM); the Joint Service Aircrew Mask (JSAM); the Joint Service Chemical Environment Survivability Mask (JSCESM); the Joint Chemical Ensemble (JCE); and the All Purpose - Personal Protective Equipment (AP-PPE).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

(5) Shape: The Shape capability provides the Synthetic Test Environment effort which produces a library of real world environmental and interferent physical characteristics for CB systems by collecting background and interferent signatures at operationally relevant locations throughout the world. The signatures will be integrated into models to generate synthetic environments to assess material performance under various conditions; and the Stimulants and Stimulators effort to design and build detection system stimulants and stimulators to facilitate hardware-in-the-loop testing in a field environment. The stimulants and stimulators will be networked on the Dugway Proving Ground test grid and will allow an operator to cause any combination of detection systems to enter an alarm state by exercising the technology in the detection system. The stimulants and stimulators will allow the detection systems to be exercised without the release of simulants into the test area. The Acquisition Programs supported by this effort will be the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA) Variants; the Joint NBC Reconnaissance System (JNBCRS); the Joint Warning and Reporting Network (JWARN); the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Standoff Detection System (JBSDS); the Joint Biological Point Detection System (JBPDS); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker; the Joint Effects Model (JEM); the Improved Point Detection System (IPDS); the Improved Chemical Agent Monitor (ICAM); and the Multiservice Radiac Program (AN/PDR-75, AN/UDR-2, AN/PDR-77, AN/UDR-13).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
TEST EQUIPMENT, STRATEGY & SUPPORT	17776	1973	14049	6407
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

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RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
PD TESS - FY 06 - Liquid Chromatograph (LC)/Gas Chromatograph (GC) - Purchased and installed LC and GC systems necessary to upgrade analytical testing equipment for low-level detection of CW agents in support of decontamination programs.	605	0	0	0
PD TESS - FY 06 - Individual Protection Ensemble (IPE) Mannequin - Conducted system feasibility study of articulated, robotic protection ensemble test mannequin that simulate soldier activity to allow for full system evaluation of individual protection ensembles against chemical warfare agents.	520	0	0	0
PD TESS - FY 06 - XYZ IPE Grid - Developed/verified sampling schema for locations to the body and each successive layer of IPE to provide commonality of measurements for IPE performance testing. FY 07 - Validate sampling schema test methodology.	485	230	0	0
PD TESS - FY 06 - Upgrade Deconamination Facility - Designed methodology to support upgrade of decontamination test fixtures/methods to test future decontaminants and decontamination systems. Conducted methodology development trials (one agent/three materials).	400	0	0	0
PD TESS - FY 06 - ColPro Airflow Mapping - Designed Collective Protection (ColPro) Airflow Mapping System.	480	0	0	0
PD TESS - FY 06 - Spectroradiometer - Purchased test equipment to characterize simulant cloud releases in a field environment for standoff detection systems.	2000	0	0	0
PD TESS - FY 06 - Stimulants and Stimulator System - Initiated stimulant devices design and stimulator system design to facilitate hardware-in-the-loop testing in a field environment.	1205	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
PD TESS - FY 06 - NTA Test System - Procured analytical instrumentation and test equipment supporting science and technology. Prepared initial design concepts and initiated design of Non-Traditional Agent (NTA) Test System. FY 07 - Complete NTA system design. Develop NTA test system functional model. FY 08 - Fabricate and install the NTA test system. Install NTA test system functional model. Develop NTA test system performance validation test plan and operating procedures.	7295	1619	10589	0
PD TESS - FY 06 - DPG Chemistry Laboratory Upgrade - Developed design and upgraded test chambers/fixtures for chemistry laboratory. FY 08 - Initiate relocation of JSLSCAD test systems. FY 09 - Complete relocation of JSLSCAD test system. Conduct performance testing to validate test system adequacy.	1970	0	960	1454
PD TESS - FY 09 - Biological Standoff Facility - Initiate design for biological standoff test facility.	0	0	0	2523
PD TESS - FY 06 - Provided systems engineering support to integrate and execute Advanced Component Development & Prototype development efforts with Joint Science and Technology Office Advanced Technology Development efforts. FY 07/08/09 - Continue engineering support.	2816	124	2500	2430
Total	**17776**	**1973**	**14049**	**6407**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	19	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	19	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Total	**0**	**19**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
TE5 TEST & EVALUATION (SDD)	18892	22163	45604	42481	37603	15485	15008	4844	Cont	Cont
TE7 TEST & EVALUATION (OP SYS DEV)	0	0	7016	7201	6922	8094	8235	8235	Cont	Cont

D. Acquisition Strategy:

PD TESS

The PD TESS program provides for the development and acquisition of new and enhanced test capabilities to support the sense, shield, shape, and sustain mission areas for the Joint Service Chemical and Biological Defense Program (CBDP). Beginning in FY06 and continuing thru the FYDP, a combination of Advanced Component Development and Prototypes (ACD&P) and System Development and Demonstration (SDD) efforts will be executed. The efforts are being supported thru new, competitive contract actions, by studies conducted by the National Academies of Science, and thru efforts conducted by technology experts of other Government agencies and academia. Technology solutions will leverage commercially available technologies and systems to provide state-of-the-art capabilities that address the current and future test and evaluation needs of the CBDP. Delivery of the capabilities is prioritized and synchronized with the needs of the acquisition programs of record to ensure capability availability when needed.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
HW S - NTA Test System Design/Model/Fabricate/Install	C/FFP	ARINC Engineering, Annapolis, MD	C	4355	1619	2Q FY07	10589	2Q FY08	0	NONE	0	16563	0
HW S - Bio Standoff Facility Design	C/FFP	TBD	C	0	0	NONE	0	NONE	2523	2Q FY09	0	2523	0
Subtotal I. Product Development:					1619		10589		2523		0	19086	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
ES SB - DPG Chem Lab Upgrade	MIPR	DPG, DPG, UT	U	0	0	NONE	960	2Q FY08	1454	2Q FY09	0	2414	0
Subtotal II. Support Costs:					0		960		1454		0	2414	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
OTHT S - XYZ IPE Grid Sampling Schema Development	MIPR	Various	U	485	230	2Q FY07	0	NONE	0	NONE	0	715	0
Subtotal III. Test and Evaluation:					230		0		0		0	715	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
PM/MS S - Program Management/Systems Engineering Support	MIPR	JPM NBC CA, APG, MD	U	2816	124	1Q FY07	2500	2Q FY08	2430	2Q FY09	0	7870	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	19	NONE	0	NONE	0	NONE	0	19	0
Subtotal IV. Management Services:					143		2500		2430		0	7889	
Remarks:													
TOTAL PROJECT COST:					1992		14049		6407		0	30104	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TE4

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
PD TESS								
LC/GC	2Q – 4Q							
IPE Mannequin Feasibility & Design	4Q	– 4Q						
Develop/Verify XYZ IPE Grid Location Schema/Methodology	3Q –	– 4Q						
Upgrade Decon Facility	3Q –	– 4Q						
ColPro Airflow Mapping	3Q 4Q							
Spectroradiometer Purchase	4Q							
Stimulant/Stimulator Development	4Q	– 3Q						
NTA Test System Design/Fabrication/Installation	1Q –	–	–	– 2Q				
DPG Chem Lab Upgrades	4Q	–	–	– 4Q				

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TT4	TECHBASE TECHNOLOGY TRANSITION (ACD&P)	0	23344	15247	17466	19271	19403	19587	20000	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TT4 TECHBASE TECHNOLOGY TRANSITION (ACD&P): Technology Demonstrations validate high-risk/high-payoff technologies that could significantly improve warfighter capabilities. These programs offer an opportunity to identify and efficiently move emerging technologies from laboratory experiments to acquisition programs thru risk reduction, engineering and integration. They cover integrating and assessing technology in a realistic operational environment and often assess the technology as an integrated system. They seek to demonstrate the potential for enhanced military operational capability and/or cost effectiveness. Upon conclusion of the demonstration, the user/sponsor provides a determination of the military utility and operational impact of the technology 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. Prior to FY07, funding was provided in Project CP4. These efforts are currently funded under this Project:

CUGR - The Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance Vehicle (CUGR) Advanced Concept Technology Demonstration (ACTD) will address several critical operational issues to enhance the speed, effectiveness, capabilities, and automation of surface and area CBRN contamination detection and identification. The technologies will be used to enhance the Joint NBC Reconnaissance System (JNBCRS) by using a non-surface contacting optical system that provides both surface contamination detection and identification in near real-time. Capabilities include traditional chemical agents and Toxic Industrial Chemicals (TICs). Additionally, the ACTD demonstrated a small unmanned ground platform (robot) equipped with sensor packages capable of conducting CR detection. This unmanned platform will enable the reconnaissance crew to conduct CR reconnaissance in limited maneuver areas using a robotic platform carrying CR sensors that report findings to the operator using active telemetry.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

EBD- The lack of a man - portable point-detector for aerosolized Biological Weapons (BW) is not currently being met by existing DoD biological detection systems. This leaves expeditionary forces vulnerable to attack without indication until those exposed present symptoms. BW detection systems currently fielded are large, heavy, power-intensive, and expensive to procure and support. The Marine Corps has no fielded biological detection capability due to lack of system suitability and the dedicated force structure. The Expeditionary Biological Detection (EBD) Advanced Technology Demonstration (ATD) will be initiated with a Front End Analysis (FEA) to compare existing DoD biological agent detection/identification systems against USMC tactical biological detection needs. Candidate system must be able to automatically detect aerosolized BW clouds and collect samples for presumptive and confirmatory identification. The ability to discriminate, classify or identify the threat is desired. The system must be deployable and employable by Marine expeditionary forces and must be suitable for use within existing Marine Air-Ground Task Force (MAGTF) logistics and manpower constraints. Additionally, the role of portable biological point detectors in the greater context of existing Joint biological detection systems will be considered.

ART - CB - Advanced Remediation Technologies - Chemical and Biological (ART-CB) ATD seeks to evaluate and demonstrate means to significantly improve existing military decontamination operations. The ATD will consider the entire spectrum of military decontamination processes and systems. Three thrusts are planned: Small Vehicle Thrust (Land and small aircraft systems); Personnel Thrust (Personnel systems); Large Equipment Thrust (Large surface vehicle and aircraft systems). The ATD will explore and establish new methods of assessing and reducing known chemical, biological, and/or radiological contamination levels. It will consider contamination density estimation methods and detailed reduction processes for detected or assessed contamination presence. The goal is to provide a processing technique or techniques for maximized use of automation and reduced personnel in protection workloads.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
CPSP COUNTERPROLIFERATION SUPPORT	0	23114	15247	17466
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - FY 07 - Continue program management and planning, documentation, IPT meetings, technical liaisons and transition planning. Complete CBRN Unmanned Ground Vehicle systems engineering, prototyping, technical testing and integration. Continue Concepts-of-Operations (CONOPs) and techniques, tactics, and procedures (TTPs) development, operational test planning and execution. Finalize Joint Contaminated Surface Detector systems engineering and technical testing. Complete modification of Joint Nuclear Biological Chemical Reconnaissance System (JNBCRS) shelter design, fabricate and integrate on High Mobility Multipurpose Wheeled Vehicles. Initiate CUGR residual support and extended user evaluation. FY 08 - Complete CONOPs and TTPs development, operational test planning and execution. Complete CUGR residual support and extended user evaluation.	0	9432	1281	0
Expeditionary Biological Detection (EBD) - FY 07 - Continue CONOPs and TTPs development and operational test planning. Initiate testing of biological detection technologies to evaluate capability to provide required capability systems engineering, prototyping, technical testing and integration and program management and planning, documentation, Integrated Process Team (IPT) meetings, technical liaisons and transition planning. FY 08 - Complete CONOPs and TTPs development and operational test planning. Complete testing of biological detection technologies to evaluate capability to provide required capability, systems engineering, prototyping, technical testing and integration and program management and planning, documentation, IPT meetings, technical liaisons and transition planning.	0	9200	3438	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Advanced Remediation Technologies (ART)	0	4482	10528	17466
FY 07 - Initiate technical testing to confirm biological agent kill demonstration testing of vaporous decontamination on designated aircraft to confirm biological agent kill, development of technical order for the qualification of the decontamination of designated aircraft using the vaporous decontamination process. Initiate coordination and development of the Interagency Biological Remediation Demonstration (I-BRD). This DOD-DHS cooperative program is focused on providing a coordinated, systems approach to the recovery and restoration of wide urban areas, to include DOD infrastructures and high traffic areas following the aerosol release of a biological agent.				
FY 08 - Continue technical testing to confirm biological agent kill. Continue ATD demonstration testing of vaporous decontamination on designated aircraft to confirm biological agent kill and development of technical order for the qualification of the decontamination of designated aircraft using the vaporous decontamination process. Continue the I-BRD program in order to: develop restoration plans; establish risk assessment and clearance goals; develop sampling/characterization/ long term monitoring plans; develop and exercise wide area decontamination methods; develop and demonstrate restoration system tools; and conduct table top exercises, field exercises, and workshops.				

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

Bullet Text (cont)	FY2006	FY2007	FY2008	FY2009
FY 09 - Complete technical testing to confirm biological agent kill. Complete ATD demonstration testing of vaporous decontamination on designated aircraft to confirm biological agent kill and development of technical order for the qualification of the decontamination of designated aircraft using the vaporous decontamination process. Initiate program management and planning, documentation, Integrated Product Team (IPT) meetings, technical liaisons and transition planning. Initiate the Small Vehicle Phase: Land and small aircraft systems: explore and establish new methods of assessing and reducing known CBRN contamination levels on and/or inside land and small air systems. Continue the I-BRD program in order to: develop restoration plans; establish risk assessment and clearance goals; develop sampling/characterization/ long term monitoring plans; develop and exercise wide area decontamination methods; develop and demonstrate restoration system tools; and conduct table top exercises, field exercises, and workshops.	0	4482	10528	17466
Total	**0**	**23114**	**15247**	**17466**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	230	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	230	0	0
Total	**0**	**230**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

CPSP ACTD

This project is a generic block description for future ACTD and ATDs. The CUGR ACTD will execute its demonstration phase in FY06 and FY07. CUGR will transition laser detection technology into various reconnaissance vehicles that are currently in an Acquisition Program under Joint Program Executive Office (JPEO) Program Manager for Reconnaissance. The CBRN Unmanned Ground Vehicle (CUGV) will transition to the Joint CBRN Dismountable Reconnaissance System (JCDRS). The Expeditionary Biological Detection technologies will be transitioned to the Joint Program Manager (JPM) Biological Detection and the Joint Biological Tactical Detection System (JBTDS).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
HW C - CUGV UGV- System Design and Integration	MIPR	Army - RDECOM, ECBC, Edgewood, MD	U	0	2162	1Q FY07	0	NONE	0	NONE	0	2162	0
HW S- EBD - Initiate System Design and Integration	MIPR	Marine Corps - MCSC, Quantico, VA	U	0	3600	2Q FY07	1019	1Q FY08	0	NONE	0	4619	0
HW S- SPIDER - Initiate Tech Order Development	MIPR	Army - RDECOM, ECBC Edgewood, MD	U	0	0	3Q FY07	1854	1Q FY08	957	1Q FY09	661	3472	0
HW S - IBRD System Design and Integration	PO	Lawrence Livermore National Laboratory, Livermore, CA	F	0	195	2Q FY07	89	2Q FY08	375	2Q FY09	187	846	0
HW S - IRBD System Design and Integration	PO	Sandia National Laboratory, Albq., NM	F	0	195	2Q FY07	89	2Q FY08	375	2Q FY09	188	847	0
HW C - ART CB (Land and small aircraft systems Thrust) Initiate System Design and Integration	MIPR	Air Force - AFRL, Dayton, OH	U	0	0	NONE	0	NONE	2109	1Q FY09	2119	4228	0
Subtotal I. Product Development:					6152		3051		3816		3155	16174	

Remarks: CPSP ACTD - FY 2006 Costs are in ITEM CP4

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
ILS C - CUGR CONOPS Development	MIPR	PACOM - USA Army Pacific, Fort Shafter, HA	U	0	750	2Q FY07	0	NONE	0	NONE	0	750	0
ILS C - CUGR CONOPS and doctrine development	Allot	USA Chemical School Ft Leonard Wood, MO	U	0	182	2Q FY07	0	NONE	0	NONE	0	182	0
ILS C - CUGR - JCSD Residual Support	MIPR	Army - RDECOM, ECBC, Edgewood, MD	U	0	686	1Q FY07	650	1Q FY08	0	NONE	0	1336	0
ILS C - CUGR CUGV Residual Support	MIPR	Army - RDECOM, ECBC Edgewood, MD	U	0	0	NONE	365	1Q FY08	0	NONE	0	365	0
ILS C - EBD CONOPS Development	MIPR	Marine Corps - MCCDC, Quantico, VA	U	0	1000	2Q FY07	444	2Q FY08	0	NONE	0	1444	0
ILS C - EBD TTP and CONOPS	MIPR	Marine Corps - II MEF, Camp Lejeune, SC	U	0	1000	2Q FY07	353	2Q FY08	0	NONE	0	1353	0
ILS C- SPIDER CONOPS Development	MIPR	Army - RDECOM, ECBC Edgewood, MD	U	0	0	NONE	1809	2Q FY08	1323	1Q FY09	0	3132	0
lLS C - IBRD TTP and CONOPS Development	MIPR	SPAWAR, San Diego, CA	U	0	386	2Q FY07	176	2Q FY08	742	2Q FY09	371	1675	0
lLS C - IBRD TTP and CONOPS Development	MIPR	National Geospatial Intelligence Agency, VA	U	0	386	2Q FY07	176	2Q FY08	743	2Q FY09	371	1676	0
lLS C - IRBD TTP and CONOPS Development	PO	Lawrence Livermore National Laboratory, Livermore, CA	F	0	398	2Q FY07	181	2Q FY08	765	2Q FY09	384	1728	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ILS C - ART CB (Land and small aircraft systems Thrust) CONOPS Development	MIPR	USA Chemical School, Ft. Leonard Wood, MO	U	0	0	NONE	0	NONE	1306	1Q FY09	617	1923	0
Subtotal II. Support Costs:					4788		4154		4879		1743	15564	

Remarks: CPSP ACTD - FY 2006 Costs are in ITEM CP4

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
OTE C - OTE C - CUGR Operational Test for JCSD	MIPR	Army Test and Evaluation Command - Alexandria, VA	U	0	5123	2Q FY07	0	NONE	0	NONE	0	5123	0
OTE C - EBD Operational Test	MIPR	Marine Corps - MCOTEA, Quantico, VA	U	0	2600	2Q FY07	793	2Q FY08	0	NONE	0	3393	0
OTE C - SPIDER Operational Test	MIPR	Air Force - AFOTEC, Kirtland AFB, NM	U	0	0	3Q FY07	3256	2Q FY08	1626	1Q FY09	365	5247	0
OTE C- IBRD Operational Test	PO	Lawrence Livermore National Laboratory, Livermore, CA	F	0	614	2Q FY07	280	2Q FY08	1181	2Q FY09	590	2665	0
OTE C - IBRD Operational Test	PO	Sandia National Laboratory, Albq., NM	F	0	341	2Q FY07	156	2Q FY08	656	2Q FY09	328	1481	0
OTE C- IBRD Operational Test	MIPR	National Geospatial Agency, Reston, VA	U	0	410	2Q FY07	186	2Q FY08	788	2Q FY09	394	1778	0
OTE C - ART CB (Land and small aircraft systems Thrust) Operational Test	MIPR	Air Force - AFOTEC Kirtland AFB, NM	U	0	0	NONE	0	NONE	631	1Q FY09	2075	2706	0
Subtotal III. Test and Evaluation:					9088		4671		4882		3752	22393	

Remarks: CPSP ACTD - FY 2006 Costs are in ITEM CP4

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
PM/MS S - CUGR Program Management	MIPR	Army - RDECOM, ECBC, Edgewood, MD		0	1111	2Q FY07	266	2Q FY08	0	NONE	0	1377	0
PM/MS S - EBD Program Management	MIPR	Marine Corps - MCSC, Quantico, VA	U	0	1000	2Q FY07	830	2Q FY08	0	NONE	0	1830	0
PM/MS S - SPIDER Program Management	MIPR	Army - RDECOM, ECBC Edgewood, MD	U	0	0	3Q FY07	1831	2Q FY08	1266	1Q FY09	540	3637	0
PM/MS S - ART CB (Land and small aircraft systems Thrust) Program Management	MIPR	Air Force - AFRL, Dayton, OH	U	0	0	NONE	0	NONE	747	1Q FY09	590	1337	0
PM/MS S - IBRD Program Management	PO	Lawrence Livermore National Laboratory, Livermore, CA		0	488	2Q FY07	222	2Q FY08	938	2Q FY09	469	2117	0
PM/MS S - IBRD Program Management	PO	Sandia National Laboratory, Albq., NM		0	487	2Q FY07	222	2Q FY08	938	2Q FY09	469	2116	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	230	NONE	0	NONE	0	NONE	0	230	0
Subtotal IV. Management Services:					3316		3371		3889		2068	12644	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

TOTAL PROJECT COST:		23344		15247		17466		10718	66775	

Exhibit R-4a, Schedule Profile

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
TT4

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
CPSP ACTD								
CASPOD/CUGR JCSD Demonstration	4Q							
CUGR JCSD Residual Support		1Q	4Q					
CUGR CUGV Demonstration	4Q							
CUGR CUGV Residual Support		1Q	4Q					
Expeditionary Biological Detection ATD	1Q		1Q					
Expeditionary Biological Detection Demonstration		3Q		4Q				
SPIDER		3Q		1Q				
IBRD		2Q		2Q				
ART				1Q		4Q		

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BUDGET ACTIVITY 5
SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD)

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	250752	212369	247935	242266	216249	294589	277131	234968	Continuing	Continuing
CA5	CONTAMINATION AVOIDANCE (SDD)	68829	46352	31623	36677	42135	53117	64030	34943	Continuing	Continuing
CM5	HOMELAND DEFENSE (SDD)	387	4000	0	0	0	0	0	0	0	4387
CO5	COLLECTIVE PROTECTION (SDD)	656	12534	13956	11477	2728	0	0	0	0	41351
DE5	DECONTAMINATION SYSTEMS (SDD)	15357	11010	6019	10300	23791	19094	16945	12811	Continuing	Continuing
IP5	INDIVIDUAL PROTECTION (SDD)	19533	17610	12881	2509	0	0	0	0	0	52533
IS5	INFORMATION SYSTEMS (SDD)	74728	24951	47465	39453	27610	17652	14893	25293	Continuing	Continuing
MB5	MEDICAL BIOLOGICAL DEFENSE (SDD)	49964	67358	69039	65396	57561	160884	143432	142500	Continuing	Continuing
MC5	MEDICAL CHEMICAL DEFENSE (SDD)	2406	6391	21348	26106	16306	18897	17740	12173	Continuing	Continuing
MR5	MEDICAL RADIOLOGICAL DEFENSE	0	0	0	7867	8515	9460	5083	2404	Continuing	Continuing
TE5	TEST & EVALUATION (SDD)	18892	22163	45604	42481	37603	15485	15008	4844	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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.

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.

Weapons of Mass Destruction Civil Support Team (WMD CST) efforts provide for testing and development of a Unified Command Suite (UCS) and an Analytical Laboratory Platform (ALS) for these teams.

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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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.

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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	260279	212072	287074	238203
FY08 President's Budget	250752	212369	247935	242266
Total Adjustments	-9527	297	-39139	4063
a. Congressional General Reductions	0	-8003	0	0
b. Congressional Increases	0	8300	0	0
c. Reprogrammings	-4628	0	0	0
d. SBIR/STTR Transfer	-2533	0	0	0
e. Other Adjustments	-2366	0	-39139	4063

Change Summary Explanation:

Funding: FY08 - Establish separate project to develop test capabilities to evaluate CBRN Defense systems (+$45,604K TE5). Other fund adjustments and realignments (-$68,194K CA5; -$7,494K CO4; +$622K DE5; +$440K IP5; +$30,180K IS5; -$23,494K MB5).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CA5	CONTAMINATION AVOIDANCE (SDD)	68829	46352	31623	36677	42135	53117	64030	34943	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CA5 CONTAMINATION AVOIDANCE (SDD): This funding supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems.

Efforts funded in this project are: (1) Joint Biological Tactical Detection System (JBTDS), (2) Joint Biological Point Detection System (JBPDS), (3) Joint Biological Stand-off Detection System (JBSDS), (4) Joint Chemical Agent Detector (JCAD), (5) Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM), (6) Joint Service Nuclear, Biological and Chemical Reconnaissance Systems I, II, III (JNBCRS I, II, III), (7) Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), and (8) Major Defense Acquisition Program (MDAP) Support.

The JBTDS will be a lightweight biological agent detector that will detect, warn and isolate samples. Isolation of a sample will permit evacuation and confirmatory analysis sample. The detector will be networked to provide a cooperative detection capability to increase the probability of warning personnel and reduce the probability of false alarm. The JBTDS will be one man portable (i.e. < 35 lbs) and capable of being battery operated.

JBPDS is a joint service biological detector system for the services. The Army platforms include the JBPDS on the Biological Integrated Detection System (BIDS) and Stryker NBC Reconnaissance Vehicle. The Air Force and Marine Corps will include the JBPDS in the Lightweight NBC Reconnaissance vehicle platforms. Additionally, the Air Force will employ the JBPDS trailer and fixed site variant to support air bases and expeditionary and forward operating forces. The Navy has identified the Aegis class ships for installation of the JBPDS and the trailer variant at port. The JBPDS is a fully automated system that increases the number of agents that can be identified by the current BIDS and IBADS, and provides first-time point biological detection capability to the Air Force and Marine Corps. Spiral development with an evolutionary component/suite upgrade acquisition approach will be used to take advantage of emerging technologies and to provide the services with enhanced detection performance at lower life cycle costs.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

JBSDS is the first standoff early warning biological detection (BD) system for the joint services. The system will be capable of providing 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 when mounted on vehicles. It will be capable of providing standoff detection, ranging, tracking, discrimination (man-made vs. natural occurring aerosols) 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 JBSDS is employing an incremental acquisition strategy.

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. Increment 1 will provide warfighter and simple platform mounted systems. Increment 2 will add low concentration detection and expand platform utility. JCAD will be used for aircraft, shipboard, wheeled vehicles, stand alone, and individual soldier applications. JCAD will replace the Automatic Chemical Agent Detector and Alarm (ACADA), Chemical Agent Monitor (CAM), Improved Chemical Agent Monitor (ICAM), and other legacy systems currently used by the individual Services.

The JCBRAWM program employs an incremental acquisition strategy to develop full capability to monitor Chemical Biological and Radiological (CBR) contamination in water. The JCBRAWM Increment 1 will provide first real-time biological and radiological detection capability in source water (lakes, sea water, rivers, and product waters from water treatment systems). Increment 2 will provide increased detection/monitoring capabilities for chemicals and biologicals in water. Increment 3 will provide a new detection system to replace the M272 Water Test Kit. Increment 4 will provide in-line continuous Chemical, Biological and Radiological (CBR) detection in water.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The JNBCRS I, formerly known as the Joint Service Light-Weight Nuclear, Biological, Chemical Reconnaissance System (JSLNBCRS) was renamed in FY08 to reflect the program's expanded mission and capabilities. The JNBCRS I is a NBC detection and identification system, that will consist of a Base Vehicle (BV) equipped with hand-held, portable and mounted, current, and advanced NBC detection and identification equipment. The JNBCRS will provide on-the-move reconnaissance and surveillance in support of combat, combat support, and combat service support forces. There will be two variants of the JNBCRS: the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) variant and the Light Armored Vehicle (LAV) variant. The Chemical Biological Mass Spectrometer Block II (CBMS Block II) will provide chemical liquid, chemical vapor, and toxic industrial chemical as a component of the JNBCRS and Stryker NBCRV systems. The JNBCRS I consists of both Commercial and Government off-the-shelf equipment to provide detection, presumptive identification, sample collection, marking, and immediate reporting of standard NBC hazards, to include hazardous industrial materials. It fills a mission critical need to enhance Chemical, Biological, Radiological and Nuclear (CBRN) reconnaissance platoon capabilities.

The JNBCRS II fills a mission critical need to enhance Chemical, Biological, Nuclear (CBRN) reconnaissance platoon capabilities. The JNBCRS II consists of both Commercial and Government off-the-shelf equipment to provide detection, presumptive identification, sample collection, marking, and immediate reporting of standard NBC hazards, to include hazardous industrial materials. The sensor suites are housed on a M1151 HMMWV. The trailer towed by the HMMWV contains various sensor decontamination and individual protection equipment. The JNBCRS II will be integrated into the overall reconnaissance and surveillance effort, conducting reconnaissance during conventional war, combating terrorism, or mission other than war (MOTW). It provides commanders with an accurate picture of the battlefield for the purpose of contamination avoidance to avert disruption to operations and organizations.

The JNBCRS III integrates improved sensors into the JNBCRS, while optimizing design to improve human factors aspects of the configuration.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The JSLSCAD will provide the first real-time, on-the-move, chemical agent vapor detection for contamination avoidance or reconnaissance operations. The JSLSCAD detects, identifies, and reports nerve, blister, and blood agent vapors. The JSLSCAD will replace the M21 Remote Stand-off Chemical Agent Alarm (RSCAAL). The JSLSCAD program will utilize an incremental acquisition approach. Increment 1 will provide an initial capability and be used for ground mobile reconnaissance applications. Increment 2 pursued an evaluation of three commercially available systems with follow-on low-rate production. As a result of the Increment 2 evaluation, a Pre-planned Product Improvement (P3I) of the Increment 1 system will be pursued instead and potential system of systems solutions will be evaluated. Increment 3 will provide standoff chemical agent vapor detection capabilities for aerial platforms.

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

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	2021	1232	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JBPDS - FY 06 - Validated Line Replaceable Unit (LRU) improvements.	1030	0	0	0
JBPDS - Congressional Interest Item - FY 06 - Biological and Chemical Agents Detector.	991	0	0	0
JBPDS - FY 07 - Provide strategic, tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	1232	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
Total	**2021**	**1232**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	19213	14491	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JBSDS - FY 06 - Completed Developmental contract (including contractor support for Multi-Service Operational Test & Evaluation (MOT&E)).	4197	0	0	0
JBSDS - FY 06 - Completed Developmental Testing.	3007	0	0	0
JBSDS - FY 07 - Complete Integrated Logistics Support (ILS) effort to support JBSDS First Unit Equipped (FUE).	0	1700	0	0
JBSDS - FY 06 - Conducted Multi-Service Operational Test & Evaluation (MOT&E). FY07 - Complete JBSDS MOT&E Evaluation and prepare for FRP Decision.	6135	1850	0	0
JBSDS - FY 06/07 - Initiate and complete agent/simulant correlation optimization.	972	1700	0	0
JBSDS - FY 06/07 - Initiate and continue Fluorescence/Algorithm Improvement Study.	1618	1900	0	0
JBSDS - FY 06 - Continued Modeling & Simulation. FY 07 - Participate in field demonstration and conduct technology modeling and simulation effort to support Increment 2 CDD development and trade-off analysis.	1107	3593	0	0
JBSDS - FY 06 - Planned and conducted Urban Background Aerosol Characterization.	2177	0	0	0
JBSDS - FY 07 - Provide strategic/tactical planning, government systems engineering, program/ financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	1648	0	0
JBSDS - FY 07 - Conduct Increment 2 Concept and Technology Development.	0	2100	0	0
Total	**19213**	**14491**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT BIO TACTICAL DETECTION SYSTEM	0	0	0	2122
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JBTDS - FY 09 - Initiate system design.	0	0	0	1369
JBTDS - FY 09 - System Integration.	0	0	0	446
JBTDS - FY 09 - Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	0	0	307
Total	**0**	**0**	**0**	**2122**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT CHEMICAL AGENT DETECTOR (JCAD)	14344	2463	11792	13925
RDT&E Articles (Quantity)	120	0	240	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCAD - FY 06 - Purchased Increment 2 systems and support (120 systems at $13.5K each). FY 08 - Purchase Increment 2 systems and support (240 at $15K each).	2200	0	3600	0
JCAD - FY 06/08/09 - Provide systems engineering support.	1757	0	2000	2848
JCAD - FY 06 - Conducted government evaluation of Increment 1 commercial detector. Efforts included completing PQT and performing operational assessment.	10387	0	0	0
JCAD - FY 07/08/09 - Initiate and complete Increment 2 Production Qualification Testing (PQT).	0	463	2692	7077
JCAD - FY 07 - Conduct Increment 1 MOT&E.	0	2000	0	0
JCAD - FY 08/09 - Increment 2 System improvement contract option.	0	0	1000	1000
JCAD - FY 08 - Conduct Increment 2 Operational Assessment (OA).	0	0	2500	0
JCAD - FY 09 - Conduct Increment 2 MOT&E.	0	0	0	3000
Total	**14344**	**2463**	**11792**	**13925**

	FY 2006	FY 2007	FY 2008	FY 2009
JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITO	0	7499	2291	4139
RDT&E Articles (Quantity)	0	25000	0	100000

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCBRAWM - FY 07 - Complete Increment 1 test methodology/design set-up.	0	1000	0	0
JCBRAWM - FY 07 - Purchase Increment 1 two-plex biological detection tickets (25,000 tickets at $50 each). FY09 - Purchase Increment 2 multiplex biological detection tickets and pre-concentrators (200 pre-concentrators (100 Bio/100 Chem) at $1K each and 100,000 tickets at $18.00 each).	0	1250	0	2000
JCBRAWM - FY 07 - Conduct Increment 1 Developmental and Operational Test (DT/OT).	0	2000	0	0
JCBRAWM - FY 07 - Conduct Increment 1 shelf life test.	0	750	0	0
JCBRAWM - FY 07/08/09 - Provide government systems engineering support.	0	2499	800	1400
JCBRAWM - FY 08 - Conduct Increment 1 Multi-Service Operational Test and Evaluation (MOT&E).	0	0	1491	0
JCBRAWM - FY 09 - Conduct Increment 1 Follow-On Test and Evaluation (FOT&E).	0	0	0	739
Total	**0**	**7499**	**2291**	**4139**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS) I	11086	1747	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JNBCRS - FY 06 - Completed CBMS II software technical transfer and Integrated Logistics Support (ILS).	200	0	0	0
JNBCRS - FY 06 - Continued development and validation of biological detection capability for Chemical Biological Mass Spectrometer (CBMS) II.	1000	0	0	0
JNBCRS - FY 06 - Completed Production Verification Test (PVT) and initiated, conducted and completed MOT&E.	5782	0	0	0
JNBCRS - FY 06 - Provided systems engineering support (Gov't).	326	0	0	0
JNBCRS - FY 06 - Continued System, Development & Demonstration Light Armored Vehicle II (LAV II) effort with a period of performance extension thru completion of MOT&E.	2050	0	0	0
JNBCRS - FY 06 - Conducted Limited Objective Experiment (LOE) to establish the foundation for standard interface control documents for Chemical Biological Radiological Nuclear (CBRN) sensor manufacturers.	1728	0	0	0
JNBCRS - FY 07 - Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	1747	0	0
Total	**11086**	**1747**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS) II	0	0	5496	7116
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JNBCRS II - FY 08 - Initiate program, develop program documentation, award contracts to develop test assets. FY 09 - Continue development of documentation and test assets.	0	0	2400	1250

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JNBCRS II - FY 08/09 - Initiate and continue training program and Integrated Logistics Support (ILS) effort.	0	0	1300	2673
JNBCRS II - FY 08 - Initiate Production Qualification Test (PQT) and Multiservice Operational Test & Evaluation testing (MOT&E). FY 09 - Continue MOT&E.	0	0	1050	2493
JNBCRS II - FY 08/09 - Initiate and continue Systems Engineering Support (Gov't).	0	0	746	700
Total	**0**	**0**	**5496**	**7116**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS) III	0	0	6044	2450
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JNBCRS III - FY 08 - Initiate and complete integration support for improved sensors into the JNBCRS.	0	0	2000	0
JNBCRS III - FY 08 - Initiate and complete sensor improvement of test vehicles.	0	0	1900	0
JNBCRS III - FY 08 - Initiate and complete update of technical manuals and training packages.	0	0	1300	0
JNBCRS III - FY08/09 - Initiate and continue engineering support (Gov't).	0	0	844	844
JNBCRS III - FY 09 - Conduct Operational Test and Evaluation.	0	0	0	1606
Total	**0**	**0**	**6044**	**2450**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2006	FY 2007	FY 2008	FY 2009
JS LIGHTWEIGHT STANDOFF CHEMICAL AGENT DET (JSLSCAD)	18238	18463	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSLSCAD - FY 06/07 - Initiate and complete product improvement program for system hardware and software integration.	3600	10100	0	0
JSLSCAD - FY 07 - Initiate and complete Engineering Development Test of product improvement program.	0	2100	0	0
JSLSCAD - FY 06/07 - Continue and complete Increment 1 model analysis and development of improved techniques to support testing and analysis to support NRC findings and refined modeling techniques.	3300	2000	0	0
JSLSCAD - FY 06 - Conducted MOT&E and validated Joint Service Interoperability.	2600	0	0	0
JSLSCAD - FY 06 - Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. FY07 - Complete government systems engineering support.	2238	4263	0	0
JSLSCAD - FY 06 - Initiated and completed purchase of data collection instrumentation.	1000	0	0	0
JSLSCAD - (T&E Capability) - FY 06 - Test Grid Instrument Network & Design. Built and installed a cloud characterization data network. Initiated comprehensive test grid and data network design (PD TESS TE5 effort).	5500	0	0	0
Total	**18238**	**18463**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
MDAP SUPPORT	980	0	6000	6925
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
MDAP SPRT - FY 06 - Researched current commodity area Chemical Biological Radiological and Nuclear (CBRN) solutions to develop integrated System of Systems (SoS) solutions for Future Combat Systems (FCS).	490	0	0	0
MDAP SPRT - FY 06 - Initiated development of the technical architecture and conducted technical performance modeling required to develop SoS for Future Combat Systems (FCS).	490	0	0	0
MDAP SPRT - FY 08/09 - Continue analysis and development of SoS architecture that supports MDAP operational architectures and provides Chemical Biological Radiological Nuclear (CBRN) defense capabilities.	0	0	3200	2125
MDAP SPRT - FY 08/09 - Initiate and continue Developmental Test (DT) to validate and verify SoS concept prior to MDAP integration.	0	0	2000	4000
MDAP SPRT - FY 08/09 - Provide strategic/tactical planning, government systems engineering, financial management, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	0	800	800
Total	**980**	**0**	**6000**	**6925**

	FY 2006	FY 2007	FY 2008	FY 2009
TECHNOLOGY TRANSFER FOR BIO SENSORS	2947	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06 - Enhancements provided for the modernization and upgrade of sensors and detection devices.	2947	0	0	0
Total	**2947**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	457	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	457	0	0
Total	**0**	**457**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	9671	7008	0	0	0	0	0	0	0	16679
JC0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	112766	105333	77784	76397	112000	111957	101539	100360	Cont	Cont
JC0101 JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITOR	0	0	5047	6067	3221	0	0	0	0	14335
JC0250 JOINT BIO STANDOFF DETECTOR SYSTEM (JBSDS)	16483	0	0	0	0	0	0	20161	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	58460	10225	7814	0	0	0	0	0	0	76499
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	22588	33855	38393	38114	35437	47001	63340	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	34511	14437	0	0	0	0	0	0	0	48948
MC0100 JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)	31151	52586	50385	75261	101413	119453	159700	164043	Cont	Cont
MX0001 JOINT BIOLOGICAL TACTICAL DETECTION SYSTEM	0	0	0	0	0	8365	15365	25321	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

C. Other Program Funding Summary (Cont):

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	14615	19497	16440	0	0	0	0	10000	Cont	Cont

D. Acquisition Strategy:

JBPDS

The Joint Biological Point Detection System (JBPDS) utilizes 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. Thru the course of Low Rate Initial Production (LRIP), the system will be technically and operationally tested in phases to ensure that the system is suitable and effective. The program will utilize results from testing to upgrade the system's line replaceable units (LRUs) to improve system performance, availability, and lower ownership cost. Per Director, Operational Test and Evaluation (DOT&E) Memorandum dated July 9, 2002, the program will support the development of a Whole System Live Agent Test (WSLAT) capability.

JBSDS

The JBSDS will use an evolutionary acquisition strategy with phased developments for the JBSDS program supporting time-phased JORD requirements. The JBSDS will provide an operationally useful and supportable capability in as short a time as possible. Increment I JBSDSs will incorporate an accelerated development cycle relying on the modification of existing GOTS and COTS technologies. A down-select of existing systems via a competitive test fly-off resulted in a selection of a single system to enter Low Rate Initial Production (LRIP) to support the Government testing program. The Increment 2 JBSDS follow-on development contract will be competitively awarded with emphasis on increasing sensitivity, range, and reliability, while reducing acquisition life cycle costs, weight, power requirements, and size. The system is to be used by all Services, thus reducing acquisition life cycle costs.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

JBTDS

The JBTDS will use an evolutionary development strategy to spiral in upgrades/improvements until the objective requirements are met. The JBTDS program will execute Milestone A in FY07. Technology Development Phase will run thru FY09 to develop system concepts, prepare Milestone B documentation and reduce risk. Technology Development will include conduct of market research, technology demonstrations, modeling and simulation efforts, data fusion network demonstrations, and evaluation of the most promising government and commercial technology in a Technology Readiness Evaluation. System Development and Demonstration (SDD) phase will commence with Milestone B. SDD will finalize system designs and procure devices to test and demonstrate device capabilities against requirements. Pre-milestone activities to reach Milestone A were initiated in FY06.

JCAD

A new Joint Chemical Agent Detector (JCAD) Acquisition Program Baseline and Single Acquisition Management Plan was approved in Sep 05. The new strategy employs an incremental acquisition approach to provide a military significant capability in the shortest time, and subsequent improvements to that capability. Increment 1 will provide warfighter and simple platform mounted systems. Increment 2 will add low concentration detection and expand platform utility. For Increment 1, four commercial systems were initially tested. If selected for production, the contract will be Sole Source Firm Fixed Price (SS/FFP) to be awarded in FY07 for Low Rate Initial Production (LRIP), with options for Full Rate Production (FRP). For Increment 2, a competitive solicitation will be issued that includes FFP options for test articles, LRIP and FRP. Increment 2 will commence with an evaluation of commercial systems.

JCBRAWM

JCBRAWM will provide an enhanced detection capability for waterborne CBR agents using an incremental development strategy. Increment 1 will provide the first biological and radiological detection capability in water. Milestone C for Low Rate Initial Production (LRIP) is planned for 1QFY08. Increment 2 will improve on the Increment 1 biological detection capability and the fielded M272 Water Test Kit chemical agent detection capability. MS B of Increment 2 is planned for FY09. Increment 3 will replace the M272 Water Test Kit chemical agent detection capability with new technology. MS B for Increment 3 is planned for FY11. Increment 4 will provide a capability for in-line and continuous sampling for CBR contamination. MS B for Increment 4 is planned for FY14.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

JNBCRS I

This joint program follows a modified Non-Developmental Item (NDI) strategy integrating Government Furnished Equipment (GFE), NDI, and systems undergoing development in parallel programs into an integrated suite of detection, analysis, and dissemination of equipment/software. A Low Rate Initial Production contract for the build and integration of 14 M1113 HMMWV variants was awarded on 4 March 2004. Two production representative LAVs were tested concurrently with LRIP HMMWVs during the 3QFY06. Initial Operational Capability (IOC) for HMMWV and LAV variants is Jun 07 (Objective) and Dec 07 (Threshold). Upon successful completion of LRIP and Multi-service Test and Evaluation (MOT&E), a Full Rate Production (FRP) competitive contract is anticipated.

JNBCRS II

The JNBCRS II program will develop and test Commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) components to be integrated into the overall reconnaissance and surveillance effort conducting reconnaissance during conventional war, combating terrorism, or mission other than war (MOTW). A government team of developers and users will review candidate systems to choose which provide the capabilities required. Contracts will be awarded to procure the selected items and government testing will be conducted to verify claimed capabilities.

It will be fielded to Light Brigade Combat teams as their integral NBC Reconnaissance capability. It is envisioned to be an Up-armored HMMWV (M1151) with Trailer containing Set Kit or Outfit (SKO) with the following capabilities:
- NBC detection, identification and sampling capability
- Hazardous materials (HAZMAT)/Toxic Industrial Chemicals (TICs) detection and identification capability
- Personal Protective Equipment (PPE) and sensors capability for confined/low-oxygen area
- Decontamination capability
- SSE support

JNBCRS II will enhance the Situation Awareness (SA) by providing the 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

JNBCRS III

The JNBCRS III program will develop and test system improvements to increase the military utility of the JNBCRS platforms. An Indefinite Delivery/Indefinite Quantity contract will be awarded to the JNBCRS platform system integrators to support system engineering, software development, test & evaluation, and system support efforts to improve human factors and increase detection capabilities. This contract type will allow the program office to rapidly respond to evolving system integration requirements and emerging test results with minimal contractual lead time. This will optimize the program goal of inserting the latest software and detection technology into the JNBCRS platforms in the shortest possible time.

JSLSCAD

The acquisition strategy for the JSLSCAD production phase focuses upon a dual path to procure required systems and concurrently develop and test system improvements to increase the military utility of the JSLSCAD Increment 1 system. Upon Milestone Decision Authority (MDA) approval of the JSLSCAD Milestone C/Full Rate Production decision, the Government will award a FFP contract for production of additional systems to fulfill the remaining Stryker NBCRV and JNBCRS production and fielding requirements.

The JSLSCAD program office will award an Indefinite Delivery/Indefinite Quantity contract to support system engineering, software development, test & evaluation, and system support efforts for a preplanned product improvement program to increase the detection capabilities of the JSLSCAD Increment 1 system. This contract type will allow the program office to rapidly respond to evolving system integration requirements and emerging test results with minimal contractual lead time. This will optimize the program goal of inserting the latest software and standoff detection technology into the JSLSCAD host platforms in the shortest possible time.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

MDAP SPRT

Major Defense Acquisition Program (MDAP) Support program will integrate System of Systems (SoS) solutions across the Armed Service's for Major Defense Acquisition Programs (MDAP) having Chemical and Biological Radiological and Nuclear (CBRN) survivability requirements. The MDAP program will achieve these SoS solutions by: (1) leading CBRN architecture development and System Engineering efforts that result in SoS concepts that address requirements; (2) establishing agreements with the MDAPs on roles and responsibilities with respect to funding deliverables and integration; (3) demonstrating modular, net-centric, plug-n-play capabilities for mounted and dismounted CBRN reconnaissance requirements; (4) developing master schedules which synchronize support for CBRN capability integration with MDAPs' schedules; and (5) providing integrated program management across the CBRN commodity areas to deliver capabilities on time that support MDAP goals.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBSDS													
SW SB - Algorithm Development & Study	MIPR	NAVSEA, Johns Hopkins University, Baltimore, MD, MIT, Boston, MA	F	1696	1900	2Q FY07	0	NONE	0	NONE	0	3596	0
SW SB - Complete ILS Effort to support JBSDS FUE	C/CPFF	SESI, Columbia, MD	C	0	1700	2Q FY07	0	NONE	0	NONE	0	1700	0
HW S - Concept & Technology Development	MIPR	Various, TBD	U	0	1991	3Q FY07	0	NONE	0	NONE	0	1991	0
JBTDS													
HW S - System Design	C/CPFF	TBD	C	0	0	NONE	0	NONE	1369	2Q FY09	0	1369	0
JCAD													
HW SB - Purchase Commercial Detectors Inc 2	C/FFP	TBD	C	3400	0	NONE	3600	2Q FY08	0	NONE	0	7000	0
SW S - Fix Problems Identified in Gate 1	SS/FFP	TBD	C	0	0	NONE	500	1Q FY08	500	1Q FY09	0	1000	0
HW S - Fix Problems Identified in Gate 1	SS/FFP	TBD	C	0	0	NONE	500	1Q FY08	500	1Q FY09	0	1000	0
JCBRAWM													
HW C - Purchase detection tickets and pre-concentrators	SS/FFP	Various	C	0	1250	2Q FY07	0	NONE	2000	2Q FY09	0	3250	0
JNBCRS II													
HW S - Develop Test Assets	C/FFP	TBD	C	0	0	NONE	1800	2Q FY08	1000	2Q FY09	0	2800	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JNBCRS III													
HW GFPP - Sensor Improvement of Test Vehicles	C/CPFF	TBD	C	0	0	NONE	1900	2Q FY08	0	NONE	0	1900	0
JSLSCAD													
HW S - Pre-planned Product Improvement of Inc 1	C/CPFF	Various	C	0	10100	1Q FY07	0	NONE	0	NONE	0	10100	0
SW S - Model Development and Analysis	C/CPIF	ITT Industries, Alexandria, VA	C	0	300	1Q FY07	0	NONE	0	NONE	0	300	0
MDAP SPRT													
SW SB - Integrate Commodity Area Hardware Systems to SoS Configuration	C/CPFF	TBD	C	0	0	NONE	3200	2Q FY08	2125	2Q FY09	0	5325	0
Subtotal I. Product Development:					17241		11500		7494		0	41331	

Remarks: JCAD - FY06 - 120 systems at $13.5K per system.
FY08 - 240 systems at $15.0K per system.

JCBRAWM - FY07 25,000 biodetection tickets @ $50 each.
FY09 200 pre-concentrates @ $1K each and 100,000 tickets at $18.00 each.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBSDS													
ES S - Modeling & Simulation, test support	PO	BSM, Inc, Kennett Square, PA	C	340	200	2Q FY07	0	NONE	0	NONE	0	540	0
ES S - Modeling & Simulation, test support	PO	NAVSEA, Johns Hopkins-APL, Columbia, MD	C	1839	1300	2Q FY07	0	NONE	0	NONE	0	3139	0
JCBRAWM													
ILS S - Logistics Support	MIPR	RDECOM, APG, MD	U	0	400	1Q FY07	200	1Q FY08	200	1Q FY09	0	800	0
TD/D S - Technical Data Documentation	MIPR	RDECOM, APG, MD	U	0	700	1Q FY07	0	NONE	0	NONE	0	700	0
JNBCRS I													
ES S - Provide strategic/tactical planning, government systems engineering, technology assessment, technical support.	MIPR	Various	U	0	1747	4Q FY07	0	NONE	0	NONE	0	1747	0
JNBCRS II													
ES S - Develop Program Documentation	C/FFP	TBD	C	0	0	NONE	400	2Q FY08	250	2Q FY09	0	650	0
ILS S - Initiate Training & ILS Effort	C/FFP	TBD	C	0	0	NONE	1300	2Q FY08	2673	2Q FY09	0	3973	0
JNBCRS III													
ES S - Integration support	C/CPFF	TBD	C	0	0	NONE	2000	2Q FY08	0	NONE	0	2000	0
TD/D S - Update Technical Manuals & Training Materials	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	1300	2Q FY08	0	NONE	0	1300	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSLSCAD													
TD/D S - Evaluation of Engineering Changes	MIPR	JPM NBC CA, APG, MD	U	1250	50	1Q FY07	0	NONE	0	NONE	0	1300	870
TD/D S - ILS Analysis and Documentation	MIPR	JPM NBC CA, APG, MD	U	2820	100	1Q FY07	0	NONE	0	NONE	0	2920	2315
TD/D S - Prepare Technical Manuals and Documents	MIPR	JPM NBC CA, APG, MD	U	1470	50	1Q FY07	0	NONE	0	NONE	0	1520	650
Subtotal II. Support Costs:					4547		5200		3123		0	20589	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBSDS													
OTHT SB - JBSDS Operational Test and Evaluation	MIPR	OTC/AEC/AFOTEC, Location Various	U	5041	1802	2Q FY07	0	NONE	0	NONE	0	6843	0
OTHT SB - Agent Simulant Correlation	MIPR	Sandia National Laboratory, Albuquerque, NM	U	630	700	2Q FY07	0	NONE	0	NONE	0	1330	0
JBTDS													
OTHT SB - System Integration	MIPR	Dugway Proving Ground, UT	U	0	0	NONE	0	NONE	446	3Q FY09	0	446	0
JCAD													
DTE S - JCAD Developmental Test (DT)	MIPR	Various Govt	U	20391	0	NONE	2692	1Q FY08	7077	2Q FY09	0	30160	0
OTE S - Increment 2 Operational Assessment	MIPR	Various	U	0	0	NONE	2500	2Q FY08	0	NONE	0	2500	0
OTE S - Increment 1 MOT&E	MIPR	Various	U	0	2000	4Q FY07	0	NONE	0	NONE	0	2000	0
OTHT S - Evaluate commercial detectors (Increment 2)	MIPR	Various	U	0	463	3Q FY07	0	NONE	0	NONE	0	463	0
OTE S - Increment 2 MOT&E	MIPR	Various	U	0	0	NONE	0	NONE	3000	2Q FY09	0	3000	0
JCBRAWM													
DTE S - Developmental Testing	MIPR	TBD	U	0	2000	2Q FY07	0	NONE	0	NONE	0	2000	0
OTHT C - Conduct shelf life test	MIPR	Various	U	0	750	2Q FY07	0	NONE	0	NONE	0	750	0
OTE S - MOT&E	MIPR	Various	U	0	0	NONE	1491	3Q FY08	0	NONE	0	1491	0
OTE S - MOT&E Planning	MIPR	Various	U	0	600	3Q FY07	0	NONE	0	NONE	0	600	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT S - Follow-On Test & Evaluation	MIPR	Various	U	0	0	NONE	0	NONE	739	2Q FY09	0	739	0
JNBCRS II													
OTE C - Development and Implementation of Test Program	MIPR	TBD	U	0	0	NONE	1050	2Q FY08	2493	2Q FY09	0	3543	0
JNBCRS III													
DTE S - Stryker NBCRV BLK II	PO	OTC, Ft. Hood, TX	U	0	0	NONE	0	NONE	1606	2Q FY09	0	1606	0
JSLSCAD													
OTE S - Incr 1 M&S & Development of Improved Techniques for Test	PO	Various	U	8506	1700	2Q FY07	0	NONE	0	NONE	0	10206	0
OTHT SB - Engineering Development Testing and Remote Sensing Systems	PO	Various	U	7209	2100	3Q FY07	0	NONE	0	NONE	0	9309	0
MDAP SPRT													
DTE S - Demonstration and Technology (DT) Testing to Validate SoS Concept	MIPR	TBD	U	0	0	NONE	2000	2Q FY08	4000	2Q FY09	0	6000	0
Subtotal III. Test and Evaluation:					12115		9733		19361		0	82986	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
PM/MS S - Project Management	MIPR	JPM BD, APG, MD	U	940	1232	2Q FY07	0	NONE	0	NONE	0	2172	0
JBSDS													
PM/MS S - JPM BD, APG, MD	MIPR	JPM BD, APG, MD	U	2677	2600	2Q FY07	0	NONE	0	NONE	0	5277	0
PM/MS S - PM/MS other services (USN, USMC, USAF)	MIPR	Various	U	368	1648	2Q FY07	0	NONE	0	NONE	0	2016	0
PM/MS S - Modeling and Simulation Analysis	MIPR	Various	U	0	650	2Q FY07	0	NONE	0	NONE	0	650	0
JBTDS													
PM/MS SB - Post MS B Contractor Support for System Demonstration	C/FFP	TBD	C	0	0	NONE	0	NONE	307	2Q FY09	0	307	0
JCAD													
PM/MS S - Joint Service Support	MIPR	Various	U	0	0	NONE	2000	2Q FY08	2848	2Q FY09	0	4848	0
JCBRAWM													
PM/MS S - Joint Service Support	MIPR	JPM NBC CA, APG, MD	U	0	1000	1Q FY07	400	1Q FY08	800	1Q FY09	0	2200	0
PM/MS S - Joint Service Integrated Product Support	MIPR	Various	U	0	799	2Q FY07	200	2Q FY08	400	2Q FY09	0	1399	0
JNBCRS II													
PM/MS S - Milestone Acquisition & Documentation Development	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	450	2Q FY08	500	2Q FY09	0	950	0
PM/MS S - Milestone Acquisition & Documentation Development	MIPR	USCMLS, FT Leonard Wood, MO	U	0	0	NONE	496	2Q FY08	200	2Q FY09	0	696	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JNBCRS III													
PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC CA , APG, MD	U	0	0	NONE	844	2Q FY08	844	2Q FY09	0	1688	0
JSLSCAD													
PM/MS S - Management and Systems Engineering Support	MIPR	JPM NBC CA, APG, MD	U	7983	1963	1Q FY07	0	NONE	0	NONE	0	9946	2580
PM/MS S - Joint Service Support	MIPR	Various	U	3050	2100	1Q FY07	0	NONE	0	NONE	0	5150	0
MDAP SPRT													
PM/MS S - MDAP SPRT Cell Planning and Management Support	Allot	MDAP SPRT Cell, Falls Church, VA	U	0	0	NONE	800	1Q FY08	800	1Q FY09	0	1600	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	457	NONE	0	NONE	0	NONE	0	457	0
Subtotal IV. Management Services:					12449		5190		6699		0	39356	
Remarks:													
TOTAL PROJECT COST:					46352		31623		36677		0	184262	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile:

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JBPDS																																
Design and Validate selected Upgrades	>>	—	—	—	—	—	3Q																									
Whole System Live Agent Test	>>	—	—	—	—	—	—	—	—	2Q																						
Request for Proposal/FRP				4Q	—	2Q																										
Follow-On Operational Test and Evaluation (FOT&E)								4Q	—	2Q																						
MS C Full Rate Production Decision											3Q	4Q																				
Proposal Preparation/Submission						2Q	—	—	1Q																							
Evaluations/Selection										2Q																						
Negotiations											3Q																					
Best and Final Offer Evaluation											3Q	4Q																				
Contract Award												4Q																				
Full Rate Production												4Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
JBSDS																																
Increment 1 JBSDS Multi-Service Operational Test & Evaluation (MOT&E)				4Q	1Q																											
Increment 1 JBSDS Full Rate Production							3Q	—	—	—	3Q																					
Increment 1 JBSDS First Unit Equipped (FUE)							3Q																									

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
JBTDS	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	1	2	3	4
MS A Decision							3Q																									
Market Survey					1Q	—	3Q																									
System Engineering Trade Study							3Q	4Q																								
CDD							3Q	—	—	—	3Q																					
MS B Doc Prep								4Q	—	—	—	4Q																				
MS B Decision														2Q																		
SDD														2Q	—	—	—	—	—	4Q												
Capability Production Document																	1Q	—	—	4Q												
MS C Decision																					1Q											
Low Rate Initial Production (LRIP)																					1Q	—	3Q									
Developmental Test & Evaluation																	1Q	—	—	4Q												
Operational Test & Evaluation																					1Q	—	—	4Q								
Full Rate Production (FRP) Decision																										2Q						
FRP																										2Q	—	—	—	—	—	4Q
First Unit Equipped (FUE)																											3Q					
JCAD																																
Inc 1 - Production Qualification Test (PQT)	>>	—	—	—	1Q																											

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCAD (Cont)																																
Inc 1 - Milestone C Low Rate Initial Production (LRIP) Decision						2Q																										
Inc 1 - Multi-service Operational Test and Evaluation (MOT&E)								4Q																								
Inc 1 - Milestone C Full Rate Production (FRP) Decision									1Q																							
Inc 2 - Production Qualification Test (PQT)							3Q	—	—	—	—	—	—	2Q																		
Inc 2 - Gate 2 Decision													1Q																			
Inc 2 - Milestone C Low Rate Initial Production (LRIP) Decision															3Q																	
Inc 2 - LRIP Contract Award															3Q																	
Inc 2 - Production Verification Test (PVT)																4Q																
Inc 2 - Multi-service Operational Test and Evaluation (MOT&E)																4Q																
Inc 2 - Milestone C FRP Decision																	1Q															
JCBRAWM																																
Contractor Test & Evaluation Efforts					1Q	—	—	4Q																								

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCBRAWM (Cont)																																
Operational/Development Test Increment 1						2Q	—	4Q																								
MS C Increment 1 Low Rate Initial Production									1Q																							
MS C Increment 1 Full Rate Production (FRP) Decision												4Q																				
JNBCRS I																																
HMMWV/LAV Production Verification Test	1Q																															
JNBCRS I Multi-service Operational Test and Evaluation (MOT&E) for HMMWV and the LAV			3Q	4Q																												
JNBCRS I Milestone C Full Rate Production (FRP) Decision						2Q																										
JNBCRS II																																
JNBCRS II Program Initiation									1Q																							
JNBCRS II Prod Verification Test - Commercial off-the-shelf Equip												4Q	—	2Q																		
In-Process Review												4Q																				

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
JNBCRS III	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	1	2	3	4
JNBCRS III Program Initiation									1Q																							
JNBCRS III Sensor Improvement & Human Factors Eng Improvement									1Q							4Q																
JNBCRS III Conduct Operational Test & Evaluation														2Q	3Q																	
JSLSCAD																																
Increment 1 - System Refurb	1Q																															
Milestone C Full Rate Production (FRP) Decision						2Q																										
Pre-Planned Product Improvement (P3I)					1Q							4Q																				
P3I Engineering Development Test (EDT)							3Q	4Q																								
MDAP SPRT																																
Modeling and Simulation (M&S) Analysis to Support Development		2Q					3Q																									
Trade Analysis to Identify Components				4Q	2Q																											
System of Systems (SoS) Component Development						2Q				2Q																						
Data Fusion Algorithm Development						2Q												2Q														

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CM5	HOMELAND DEFENSE (SDD)	387	4000	0	0	0	0	0	0	0	4387

A. Mission Description and Budget Item Justification:

Project CM5 HOMELAND DEFENSE (SDD): The Force Protection - Chemical and Biological Installation Protection Program (CBIPP) consists of a highly effective and integrated Chemical, Biological, Radiological, and Nuclear (CBRN) installation protection and response capability. This capability includes detection, identification, warning, information management, individual and collective protection, restoration, and medical surveillance, protection and response. The communications network will leverage existing capabilities and be integrated into the base operational command and control infrastructure. The program will develop and procure the CBRN systems, emergency responder equipment sets, New Equipment Training (NET), Contractor Logistics Support, spares, and associated initial consumable items required to field an integrated installation protection capability for up to 200 DoD installations.

The Weapons of Mass Destruction - Civil Support Teams program (WMD-CST) supports the acquisition and delivery of an integrated chemical, biological, and nuclear analytical detection and rapid response capability for the National Guard Bureau's (CSTs) and the United States Army Reserve (USAR) Chemical Reconnaissance and Decontamination Platoons. Capabilities include a state-of-the-art Command, Control, Communications, Computer, and Intelligence (C4I) system that enables secure communications with Federal, State, and Local authorities from a WMD incident site. The program also provides CSTs and Reconnaissance/Decontamination platoons with individual protection, detection, survey and communications monitoring capability.

Major end items for this Commercial off-the-shelf (COTS) based acquisition program include the Analytical Laboratory System (ALS), and the Unified Command Suite (UCS) for the WMD-CSTs. The ALS provides a mobile laboratory platform that incorporates advanced analytical detection technology for the identification of Chemical Warfare (CW) agents, Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs), and Biological Warfare (BW) agents. The UCS provides secure communications interoperability with the ALS and reach back capability to federal, state, and local authorities from the incident site.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
WMD - CIVIL SUPPORT TEAMS	387	3961	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
WMD CST - FY 06 - Completed Operational Assessment (OA) of the UCS Increment 1 and provided government engineering and planning support.	387	0	0	0
WMD CST#15 - Congressional Interest Item - FY 07 - Countermeasures to Biological and Chemical Control Rapid Response.	0	3961	0	0
Total	**387**	**3961**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	39	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	39	0	0
Total	**0**	**39**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	0	0	0	0	0	0	0	0	0	0
JS0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	56404	13146	0	0	0	0	0	0	0	69550
JS0500 CB INSTALLATION FORCE PROTECTION PROGRAM	144708	76619	86418	88748	62300	60070	0	0	0	518863

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

D. Acquisition Strategy:

WMD CST

This program utilizes multiple acquisition vehicles to deliver a CBRN capability to the WMD CSTs.

ALS Increment 1:
The ALS Increment 1 program will upgrade the analytical capability of the ALS System Enhancement Program (SEP) system with the objective of improving chemical and biological detection sensitivity and selectivity in line with the requirements as outlined in the validated Capability Production Document (CPD).

Government off-the-shelf (GOTS) Detection, Protection, and Decontamination Equipment:
Procure Chemical and Biological Defense equipment as outlined in Defense Reform Directive #25 (see GOTS items listed below under Program Unit Cost).

COTS Evaluation:
Evaluate existing and new COTS equipment for incorporation into the NGB CST Table of Distribution and Allowances (TDA) and USAR Letter of Authorization (LOA).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
WMD CST#15 - Countermeasures to Bio & Chem Control	SS/FP	TBD	C	0	3961	4Q FY07	0	NONE	0	NONE	0	3961	0
Subtotal I. Product Development:					3961		0		0		0	3961	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	39	NONE	0	NONE	0	NONE	0	39	0
Subtotal IV. Management Services:					39		0		0		0	39	
Remarks:													
TOTAL PROJECT COST:					4000		0		0		0	4000	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CM5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
WMD CST																																
Incr 1 - Operational Assessment (OA)				4Q																												

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CO5	COLLECTIVE PROTECTION (SDD)	656	12534	13956	11477	2728	0	0	0	0	41351

A. Mission Description and Budget Item Justification:

Project CO5 COLLECTIVE PROTECTION (SDD): Funding supports System Demonstration and Low Rate Initial Production (SD/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 CBRN environments. CP systems can be installed on any platform such as shelters, vehicles, ships, aircraft, buildings, and hospitals. CP systems create spaces safe from the effects of CBRN contamination.

Systems funded under this project are: (1) Joint Collective Protection Equipment (JCPE), (2) Joint Expeditionary Collective Protection (JECP).

JCPE - Provided needed improvements and cost saving standardization to fielded fixed site, building, shipboard, and vehicle collective protection systems. The program focused on fixing specific problems and deficiencies with fielded collective protection system equipment designated high priority by each Service and validated by the Collective Protection Joint Project Office (ColPro JPO). Standardization of individual system components (specifically filter systems) across Joint Service mission areas reduced logistics burden while maintaining the industrial base.

JECP - Results of a Baseline Capability Assessment conducted by the Joint Requirements Office (JRO) identified expeditionary Collective Protection (CP) as the highest priority capability gap within the commodity area. JECP provides the Joint Expeditionary Forces a Collective Protection (CP) capability which is lightweight, compact, modular, and affordable. A family of systems is planned that will allow the application of CP to portable hard-side and soft-side shelters, enclosed spaces of opportunity, and in remote austere locations as a stand alone 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), heat, dust, and sand. The employment of JECP is a strategic deterrence against enemy use of CBRN agents or TIMs, and will reduce the need for personnel and equipment decontamination.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT COLLECTIVE PROTECTION EQUIPMENT	656	2548	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCPE - FY 06 - Completed the development of documentation to fully support the Collectively Protected Expeditionary Medical Support (CP EMEDS) and Collective Protection System (CPS) liner systems. Completed identification and testing of a second source for individual distribution breathing air hose. Continued development and testing of reliability improvements to the Fan Filter Assembly (FFA)-400 and M28 blowers. Continued live agent testing of improved 100/200 Cubic Feet per Minute (CFM) gas filters. Continued testing of 100/200 CFM gas filters with new media to provide protection against selected Toxic Industrial Chemicals (TICs). Completed development and testing of collective protection system, operational blast mitigation techniques. Continued development of shipboard CP automation. Initiated Aerodynamic deduster study to reduce the CPS logistics burden. Continued program management and IPT support.	271	0	0	0
JCPE - FY 06 - Initiated environmental qualification of simplified filter housing. Initiated technical data package for Collectively Protected Expeditionary Latrine (CPEL). Initiated a test and surveillance effort to better understand factors affecting service life and capacity of filters for land-based facilities. Initiated applicability of High Efficiency Particulate Arrestance (HEPA) filter studies to Chemical, Biological, Radiological, and Nuclear (CBRN) defense. Initiated the design and testing of an improved Navy filter housing o-ring. Initiated a study on the effects on CBRN filters due to ingestion of smoke. Initiated the study and analysis of the M93 gas particulate filter unit. Initiated design and testing of improved gaskets for M98 filter set.	385	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JCPE - FY 07 - Complete technical data package for FFA-400. Complete development of shipboard CP automation. Complete the design and testing of an improved Navy filter housing o-ring. Complete environmental qualification of simplified filter housing. Complete Aerodynamic deduster study to reduce the CPS logistics burden. Complete the study and analysis of the M93 gas particulate filter unit. Continue program management and IPT support. Complete development and testing of reliability improvements to the Fan Filter Assembly (FFA)-400 and M28 blowers. Complete testing of 100/200 CFM gas filters with new media to provide protection against selected Toxic Industrial Chemicals (TICs).	0	482	0	0
JCPE - FY 07 - Complete the test and surveillance effort to better understand factors affecting service life and capacity of filters for land-based facilities. Complete design and testing of improved gaskets for M98 filter set. Complete contaminated filter change-out procedures. Complete agent testing to verify 100/200 CFM gas filter improvements. Complete technical data package for Collectively Protected Expeditionary Latrine (CPEL). Complete applicability of High Efficiency Particulate Arrestance (HEPA) filter studies to Chemical, Biological, Radiological, and Nuclear (CBRN) defense. Complete a study on the effects on CBRN filters.	0	966	0	0
JCPE - FY 07 - Provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	1100	0	0
Total	**656**	**2548**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	0	9864	13956	11477
RDT&E Articles (Quantity)	0	12	18	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JECP - FY 07/08/09 - Award SDD contract for prototype development and testing including an Early Operational Assessment (EOA). Prototypes will consist of four tent kits, four structure kits at an estimated unit cost of $119K each and four standalone systems with an estimated unit cost of $375K each. The total cost of all prototypes is $2,452K. Integrate contractor into the joint IPT structure, build contractor WBS, participate in technical reviews Systems Requirements Review (SRR), System Functional Review (SFR) and Preliminary Design Review (PDR) and Critical Design Reviews (CDR). Develop and integrate prototypes, conduct configuration management, logistics planning, and contractor developmental testing.	0	5408	4500	2000
JECP - FY 08 - Procure Low Rate Initial Production (LRIP) quantities of JECP Family of Systems (FoS). LRIP systems will consist of 12 tent kits and three structure kits at an estimated unit cost of $124K each along with three standalone systems at an estimated unit cost of $390K each. The total cost of all LRIP systems is $3,030K.	0	0	3400	0
JECP - FY 07/08/09 - Conduct Systems Engineering Integrated Product Team (IPT) support. Provide a Subject Matter Expert (SME) to the Joint Requirements Office (JRO) for Capabilities Production Document (CPD) development. Finalize system performance specification, system architecture, and system Work Breakdown Structure (WBS). Provide technical oversight of SDD contractor. Plan and conduct technical reviews including a SRR, SFR, PDR, and CDR. Validate and verify system configuration. Initiate New Equipment Training program for JECP FoS.	0	1230	1250	1250
JECP - FY 07/08/09 - Conduct Test and Evaluation (T&E) IPT support. Provide T&E acquisition documentation for MS B. Integrate the Test Threat Support Package (TTSP) into the TEMP. Finalize test methodology and Design of Experiment (DOE). Finalize TEMP. Conduct Limited Objective Experiment (LOE) with the Joint CBRN Combat Developer, Joint Experimentation and Analysis Branch, to examine service unique tactics, techniques, and procedures. Conduct integrated test planning, coordination, and execution. Secure equipment and facilities and conduct an EOA of prototypes in relevant environments. Support Initial Operational Test and Evaluation (IOT&E) phase.	0	1497	1500	1500
JECP - FY 09 - Conduct IOT&E of JECP family of systems for Initial Operational Capability (IOC).	0	0	0	3579

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JECP - FY 07/08/09 - Thru the product support Integrated Product Team (IPT), initiate a supportability analysis to address logistics support elements including maintenance philosophy, manpower & personnel, supply support, Tech Data, support & test equipment, training and training support. Initiate development of a Post-Production Support Plan and a Joint Logistics Support Plan. Finalize Joint Support Strategy. Conduct a Performance Based Logistics Assessment. Conduct an Independent Logistics Assessment. Develop JECP FoS documentation and support strategy for NET program.	0	433	750	900
JECP - FY 07 - Conduct Limited Objective Experiment (LOE) with the Joint Combat Developer, Joint Experimentation and Analysis Branch, to examine service unique tactics, techniques, and procedures. Conduct literature search, experiment planning conference, notional concept of operations, table top exercise, live experiment, and final report.	0	200	0	0
JECP - FY 07/08/09 - Program management and Acquisition Program Management Office (APMO) contractor support including financial tracking, schedule monitoring, System Design Development (SDD) contract management, and JPEO/JPM reporting requirements. Conduct acquisition documentation for MS B (Single Acquisition Management Plan (SAMP), Acquisition Program Baseline (APB), Test & Evaluation Master Plan (TEMP), SCG, etc.). Conduct source selection planning and support award of System Development and Demonstration contract. Prepare MS C documentation. Obtain material release and type classification for JECP FoS.	0	1096	1100	1100
JECP - FY 08/09 - Provide strategic tactical planning, government systems engineering, program/ financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	0	0	1456	1148
Total	**0**	**9864**	**13956**	**11477**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SBIR/STTR	0	122	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	122	0	0
Total	**0**	**122**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	10377	8798	10564	5124	0	0	0	0	0	34863
JP0911 CP FIELD HOSPITALS (CPFH)	2900	4073	3519	3369	3475	3519	4318	4739	Cont	Cont
JP1111 JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)	0	0	0	0	6173	7997	5171	4790	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	18137	30462	24774	32001	32424	32828	37363	37330	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

D. Acquisition Strategy:

JCPE

The JCPE acquisition strategy was to consolidate planned improvements to fielded collective protection systems into one Joint product improvement program for addressing deficiencies, improvements, and cost saving initiatives. System improvements, after successful prototype development and testing, were delivered via a performance specification that can then be implemented by respective Services thru an Engineering Change Proposal (ECP) process. All modified components were fabricated and tested to ensure Service compatibility. Fielding will be accomplished thru phased replacement or attrition thru the supply system. Existing procurement contracts were leveraged to expedite fielding improvement upgrades.

JECP

Strategy based on incremental development in consonance with the JRO/User developed capability documents. During the Pre-MS A Concept Refinement Phase, conduct 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 will be conducted to mitigate risk and identify affordable mature technologies that individually or together meet the warfighters needs. Following MS B, a Statement of Objectives (SOO) and Performance Specification will be used to award competitive cost plus incentive type contract(s) to build prototypes that will be subjected to robust engineering developmental testing and Operational Assessment during the System Development & Demonstration phase. Following MS C, award a contract for Low Rate Initial Production (LRIP) to support formal Developmental Testing (DT) and Initial Operational Test & Evaluation (IOT&E). Following a successful Full Rate Production (FRP) decision, award a fixed price production contract with multi-year options and product improvement incentives. For each incremental capability identified by the user, a similar approach for MS B and C will be used to seamlessly integrate improved and/or new technologies into follow-on increments to achieve a full JECP capability.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
HW C - Technical data package for FFA-400	MIPR	ECBC, Edgewood, MD	U	0	90	1Q FY07	0	NONE	0	NONE	0	90	0
HW S - Contaminated filter changeout procedures	MIPR	NSWCDD, Dahlgren, VA	U	0	100	1Q FY07	0	NONE	0	NONE	0	100	0
JECP													
HW C - Prototype Development	C/CPIF	TBD	C	0	5408	3Q FY07	4500	2Q FY08	2000	2Q FY09	0	11908	0
HW S - JECP FoS LRIP	C/CPIF	TBD	C	0	0	NONE	3400	4Q FY08	0	NONE	0	3400	0
Subtotal I. Product Development:					5598		7900		2000		0	15498	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
ES S - Systems Engineering IPT	MIPR	Various	U	0	1230	1Q FY07	1250	1Q FY08	1250	1Q FY09	0	3730	0
ILS S - Product Support IPT	MIPR	Various	U	0	433	1Q FY07	750	1Q FY08	900	1Q FY09	0	2083	0
TD/D S - Limited Objective Experiment	MIPR	Fort Leonard Wood, MO	U	0	200	1Q FY07	0	NONE	0	NONE	0	200	0
Subtotal II. Support Costs:					1863		2000		2150		0	6013	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
DTE C - Environmental Qualification of Simplified Filter Housing	MIPR	NSWCDD, Dahlgren, VA	U	40	37	1Q FY07	0	NONE	0	NONE	0	77	0
OTHT C - Test FFA-400-100 Motor/Blower Prefilter	MIPR	NSWCDD, Dahlgren, VA	U	0	116	1Q FY07	0	NONE	0	NONE	0	116	0
OTHT SB - 100/200 CFM Gas Filter - Live Agent Testing	MIPR	RDECOM, APG, MD	U	1402	65	1Q FY07	0	NONE	0	NONE	0	1467	582
OTHT C - Land-based Filter Surveillance Testing	MIPR	NSWCDD, Dahlgren, VA	U	125	250	1Q FY07	0	NONE	0	NONE	300	675	0
OTHT S - Contaminated filter changeout procedures	MIPR	NSWCDD, Dahlgren, VA	U	0	485	1Q FY07	0	NONE	0	NONE	0	485	0
DTE C - Improved gasket for M98 filter set	MIPR	NSWCDD, Dahlgren, VA	U	0	100	1Q FY07	0	NONE	0	NONE	0	100	0
JECP													
OTHT SB - Test & Evaluation IPT	MIPR	Various	U	0	1497	1Q FY07	1500	1Q FY08	1500	1Q FY09	0	4497	0
OTE S - JECP FoS IOT&E	MIPR	COMOPTEVFOR ATFP, Norfolk, VA	U	0	0	NONE	0	NONE	3579	2Q FY09	0	3579	0
Subtotal III. Test and Evaluation:					2550		1500		5079		300	10996	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
PM/MS S - IPT Support	MIPR	Various	U	1021	38	1Q FY07	0	NONE	0	NONE	0	1059	820
PM/MS S - Overall Program Management & IPT Oversight	MIPR	NSWCDD, Dahlgren, VA	U	1938	167	1Q FY07	0	NONE	0	NONE	0	2105	1403
PM/MS S - JPEO Oversight	MIPR	JPEO-CBD, Falls Church, VA	U	0	1100	4Q FY07	0	NONE	0	NONE	0	1100	0
JECP													
PM/MS SB - APMO Support	MIPR	Various	U	0	1096	1Q FY07	1100	1Q FY08	1100	1Q FY09	0	3296	0
PM/MS S - JPEO-CBD Support	MIPR	JPEO CBD, Falls Church, VA	U	0	0	NONE	1456	1Q FY08	1148	1Q FY09	0	2604	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	122	NONE	0	NONE	0	NONE	0	122	0
Subtotal IV. Management Services:					2523		2556		2248		0	10286	
Remarks:													
TOTAL PROJECT COST:					12534		13956		11477		300	42793	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCPE																																
Develop and Test FFA400-100 and M93 MCPE	>>	—	—	—	—	—	—	4Q																								
Agent Testing 100/200 CFM Gas Filters	>>	—	—	—	—	—	3Q																									
Develop and Test 100/200 CFM Gas Filters-TICs	>>	—	—	—	—	—	3Q																									
Individual Breathing Air Hose Improvements	>>	—	—	4Q																												
Develop and Test Ship CP Automation	>>	—	—	—	—	—	3Q																									
Develop and Test CP Blast Operations Analysis	>>	2Q																														
TDP for CP EMEDS, CPS, & A2S	>>	—	—	4Q																												
Environmental qualification of simplified filter housing	1Q	—	—	—	—	—	—	4Q																								
TDP for CPEL	1Q	—	—	—	—	—	3Q																									
Land-based Aged Filter Capacity	1Q	—	—	—	—	—	—	4Q																								
HEPA filter studies to CBR defense	1Q	—	—	—	—	2Q																										
Effects on CBRN filters due to ingestion of smoke		2Q	—	—	—	2Q																										

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCPE (Cont)																																
Improved Navy filter housing o-ring		2Q					3Q																									
Study and analysis of the M93 GPFU		2Q						4Q																								
Aerodynamic deduster study to reduce the CPS logistics burden		2Q						4Q																								
Improved gaskets for M98 filter set		2Q						4Q																								
Contaminated filter changeout procedures					1Q			4Q																								
TDP for FFA-400					1Q			4Q																								
JECP																																
Complete CDD						2Q																										
Decision Review						2Q																										
Limited Objective Experiment					1Q	2Q																										
MS-B Decision							3Q																									
Request for Proposal (RFP)						2Q																										
System Development Demonstration Contract Award							3Q																									
Prototype System Development & Testing							3Q						1Q																			
Operational Assessment (OA)											3Q																					

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CO5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JECP (Cont)																																
Capability Production Document (CPD)											3Q																					
MS-C Decision												4Q																				
LRIP Option												4Q																				
IOT&E														2Q	3Q																	
FRP Decision Review																4Q																

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
DE5	DECONTAMINATION SYSTEMS (SDD)	15357	11010	6019	10300	23791	19094	16945	12811	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DE5 DECONTAMINATION SYSTEMS (SDD): This project funds System Development and Demonstration (SDD) for (1) the Joint Service Personnel/Skin Decontamination System (JSPDS), (2) the Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS), (3) the Human Remains Decontamination System (HRDS), (4) the Joint Service Sensitive Equipment Decontamination (JSSED) and (5) Joint Platform Interior Decontamination (JPID).

The JSPDS will provide a United States Food and Drug Administration approved individually carried skin decontamination kit that will be used for immediate decontamination of skin, protective masks, hoods, gloves and small scale weapons (under 0.50 caliber).

The JSTDS-SS programs will be transported by existing platforms in close proximity to combat operations and will be used for operational and thorough decontamination of non-sensitive military materiel, limited facility decontamination at logistics bases, airfields (and critical airfield assets), naval ships, ports, key command and control centers, and other fixed facilities that have been exposed to CBRN warfare agents/contamination and Toxic Industrial Materials (TIMs).

The JSSED and JPID programs are based on the same technology and are being executed together by the Joint Material Decontamination Program Office. These systems will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment (JSSED) and vehicle/aircraft/buildings interiors, and associated cargo (JPID). JPID will develop two variants, the Joint Material Decontamination System - Tactical (JMDS-TAC) to decontaminate the interior of tactical ground vehicles and tactical aircraft and the Joint Material Decontamination System - Large Platform Interior (JMDS-LPI) to decontaminate the interior of large platforms (e.g., ships, large aircraft, buildings) and associated cargo. The JSSED, JMDS-TAC and JMDS-LPI will included a JMDS wipe for removal of gross contamination.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

The Human Remains Decontamination System (HRDS) will provide standardized, joint, intra-theater capabilities for the recovery, transportation and handling of human remains contaminated with chemical, biological, and radiological hazards. The system will deliver the capability to safely handle and transport all decontaminated remains, regardless of contamination status, from an operational theater to the servicing mortuary in the Continental United States for final disposition.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
HUMAN REMAINS DECON SYSTEM	0	0	1327	2568
RDT&E Articles (Quantity)	0	0	60	60

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
HRDS - FY 08 - Complete Market Research. FY 08/09: Prepare and release solicitation and evaluate responses.	0	0	460	60
HRDS - FY 08/09 - Procure test articles (Contaminated Human Remains Pouches (CHRPs): Remains Decontamination System (RDS): various quantity/various components (tents, roller assembly, sprayer, containers and contaminant bags)) to support Component Developmental Testing and System Integration and Reliability testing. (FY 08: 60 pouches at $1K each for $60K, FY 09: 60 pouches at $1K each for $60K).	0	0	100	400
HRDS - FY 08/09 - Conduct developmental testing of CHRP.	0	0	174	200
HRDS - FY 09 - Conduct developmental testing and analysis of RDS components against operational requirements, where existing data is not available. Verification of component interfaces. HRDS System level testing.	0	0	0	700
HRDS - FY 08/09 - Conduct engineering, testing, and logistics planning and documentation to support Milestone B, Milestone C, Full Rate Production Decision and fielding.	0	0	593	1208
Total	**0**	**0**	**1327**	**2568**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT PLATFORM INTERIOR DECONTAMINATION	0	0	0	3255
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JPID - FY 09 - Continue development of JMDS-TAC and JMDS-LPI initiated under ACD&P.	0	0	0	3255
Total	**0**	**0**	**0**	**3255**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM	3603	2025	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSPDS - FY 06 - Updated program documentation to support MS C full rate production decision, updated logistics support documentation including fielding plans, and began implementation of the support strategy identified by the Performance Based Logistics (PBL) and the Business Case Analysis (BCA).	548	0	0	0
JSPDS - FY 06 - Conducted Initial Operational Test and Evaluation (IOT&E) to support full rate production decision and conducted packaging retest of modified pouch packaging.	3055	0	0	0
JSPDS - FY 07 - Perform follow-on live agent testing with additional threat agents.	0	600	0	0
JSPDS - FY 07 - Perform shelf-life extension testing on decontaminants.	0	229	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JSPDS - FY 07 - Complete program documentation updates and obtain MS C full rate production decision. Transition to support strategy identified by the PBL BCA.	0	1196	0	0
Total	**3603**	**2025**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
JS SENSITIVE EQUIP DECON	1488	1234	4692	4477
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JSSED - FY 06 - Completed JMDS Wipe prototype and support package development.	1488	0	0	0
JSSED - FY 07 - Award SDD contract for JSSED.	0	1234	0	0
JSSED- FY 08 - Initiate development of JSSED prototype.	0	0	3250	0
JSSED - FY 08/09 - Fabricate JSSED prototype for contractor test.	0	0	1442	2270
JSSED - FY 09 - Initiate JSSED Developmental Test (DT).	0	0	0	2207
Total	**1488**	**1234**	**4692**	**4477**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
JOINT SERVICE TRANSPORTABLE DECONTAMINATION SYSTEM - SM	10266	7645	0	0
RDT&E Articles (Quantity)	40000	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSTDS-SS - FY 06 - Conducted Initial Operational Test and Evaluation (IOT&E) to support full rate production decision.	2294	0	0	0
JSTDS-SS - FY 06 - Procured decontaminant (40,000 gallons at $26 per gallon, 1040K) and interim contractor logistics support for testing.	1400	0	0	0
JSTDS-SS - FY 06 - Updated program documentation, performed an independent logistics assessment, validated life cycle cost estimate and obtained full rate production decision.	1800	0	0	0
JSTDS-SS - FY 06 - Performed DT II which included live chemical and biological agent testing, extensive material compatibility and efficacy testing, environmental testing and shelf-life testing.	2267	0	0	0
JSTDS-SS - FY 06 - Conducted PBL and BCA to determine optimum logistics support strategy for the JSTDS-SS hardware and decontaminant(s). Updated logistics and training documentation based on test results. Prepared fielding plans. Developed and validated shelf life surveillance plan for JSTDS-SS decontaminant.	2505	0	0	0
JSTDS-SS - FY 07 - Perform extended live agent, toxic industrial material and material compatibility testing on the JSTDS-SS decontaminant to determine if objective capabilities can be met with existing decontaminant.	0	1209	0	0
JSTDS-SS - FY 07 - Update program, logistics and training documentation to reflect configuration changes, and test results. Prepare plans to modify fielded systems, as required.	0	1540	0	0
JSTDS-SS - FY 07 - Complete Initial Operational Test and Evaluation (IOT&E) to support full rate production decision.	0	4896	0	0
Total	**10266**	**7645**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	106	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	106	0	0
Total	**0**	**106**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
JD0055 JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM (JSPDS)	0	11542	13011	0	0	0	0	0	0	24553
JD0056 JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)	2911	7176	15628	22161	30474	34835	40346	17992	Cont	Cont
JD0058 JOINT PORTABLE DECONTAMINATION SYSTEM (JPDS)	0	0	0	0	0	4002	5014	4322	Cont	Cont
JD0060 JOINT PLATFORM INTERIOR DECONTAMINATION (JPID)	0	0	0	0	0	0	15102	31442	Cont	Cont
JD0061 JOINT SERVICE SENSITIVE EQUIPMENT DECON (JSSED)	0	0	0	5720	8837	8452	19915	23000	Cont	Cont
JD0062 HUMAN REMAINS DECON SYSTEM	0	0	0	0	1000	3458	3110	5000	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

D. Acquisition Strategy:

HRDS

The HRDS program consists of an integration effort for the Remains Decontamination System (RDS) and a developmental effort for the Contaminated Human Remains Pouch (CHRP). The RDS is composed of components that are type classified in the military system or commercially available. These components will be procured thru existing supply channels or commercial item contracts. The Contaminated Human Remains Pouch will require developmental efforts and a competitive contract strategy will be used. Multiple candidates may be tested prior to awarding the production contract.

JPID

The Joint Platform Interior Decontamination Program will be acquired as part of an overarching Joint Material Decontamination System (JMDS) evolutionary acquisition strategy, which covers both the JPID and Joint Service Sensitive Equipment Decontamination (JSSED) programs. This strategy uses a single technology I to meet the sensitive equipment and platform interior requirements. JMDS variants will be implemented in phases to leverage off lessons learned in the development process and to expand the capabilities to meet the different operational requirements. Each design is based off previous effort expanded to meet different operational requirements. A JMDS wipe for removal of gross contamination will be included as an accessory for each of the JMDS variants.

JSPDS

The JSPDS program is implementing an evolutionary acquisition strategy using spiral and incremental development. The first increment will leverage Commercial off-the-Shelf (COTS) systems/Non-Developmental Items (NDI). This increment will increase the warfighter's capability and address near-term support issues with the M291 Skin Decontamination Kit (SDK). The follow-on efforts will focus on expanding the capabilities, such as increasing the agents the systems can decontaminate, and expanding mission sets. A full and open competition will be used to award a contract for Research and Development (R&D) efforts and initial procurement.

JSSED

The Joint Material Decontamination System (JMDS) program is implementing an evolutionary acquisition strategy. The JMDS program will use a single technology in multiple applications to meet the sensitive equipment and platform interior requirements. All three JMDS variants are implemented in phases to leverage off the lessons learned in the development process. JMDS - Sensitive Equipment Decontamination (SED) will start first followed by JMDS-TAC and JMDS-LPI. Each design is based off previous effort expanded to meet different operational requirements. All JMDS variants are support by a JMDS Wipe.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

JSTDS SS

The JSTDS Small-Scale program is implementing an evolutionary acquisition strategy using incremental and spiral development. Increment 1 will focus largely upon fielding hardware systems that improve upon the capability of the M17 Lightweight Decontamination System.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HRDS													
HW C - Contaminated Human Remains Pouch (CHRP)	C/FPI	TBD	C	0	0	NONE	60	4Q FY08	60	3Q FY09	100	220	0
HW C - Remains Decontamination System (RDS) Components	MIPR	TBD	U	0	0	NONE	40	3Q FY08	340	1Q FY09	0	380	0
JPID													
HW C - Develop system capability	MIPR	TBD	U	0	0	NONE	0	NONE	1305	2Q FY09	0	1305	0
JSSED													
HW S - Build JSSED pre-clean kits	C/CPFF	TBD	C	800	200	1Q FY07	1442	NONE	2270	NONE	0	4712	0
Subtotal I. Product Development:					200		1542		3975		100	6617	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HRDS													
ILS S - HRDS Logistics Planning	C/FFP	TBD	C	0	0	NONE	100	1Q FY08	300	1Q FY09	150	550	0
ILS S - HRDS Logistics Planning	MIPR	TBD	U	0	0	NONE	100	1Q FY08	222	1Q FY09	100	422	0
ILS S - HRDS Market Survey	C/FFP	TBD	C	0	0	NONE	93	1Q FY08	0	NONE	0	93	0
JSPDS													
ILS S - JSPDS Logistics studies	MIPR	TBD	U	100	400	1Q FY07	0	NONE	0	NONE	0	500	0
ILS S - JSPDS Logistics studies	C/CPFF	TBD	C	100	460	1Q FY07	0	NONE	0	NONE	0	560	0
JSSED													
ES S - Develop system	MIPR	TBD	U	0	0	NONE	3250	1Q FY08	0	NONE	0	3250	0
JSTDS SS													
TD/D S - JSTDS-SS - Update technical documentation	MIPR	TBD	U	555	932	1Q FY07	0	NONE	0	NONE	0	1487	0
Subtotal II. Support Costs:					1792		3543		522		250	6862	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HRDS													
DTE S - HRDS Developmental Test Planning	C/FFP	TBS	C	0	0	NONE	160	1Q FY08	160	1Q FY09	160	480	0
OTE S - HRDS Operational Test Planning	MIPR	Army Test and Evaluation Command, Alexandria, VA	U	0	0	NONE	100	1Q FY08	199	1Q FY09	300	599	0
DTE C - RDS Developmental Testing	MIPR	TBD	U	0	0	NONE	24	3Q FY08	200	1Q FY09	0	224	0
DTE C - CHRP Developmental Test	MIPR	TBD	U	0	0	NONE	150	3Q FY08	150	1Q FY09	0	300	0
DTE S - HRDS Systems Level Testing	MIPR	TBD	U	0	0	NONE	0	NONE	450	2Q FY09	0	450	0
JSPDS													
DTE S - JSPDS Shelf life extension testing	MIPR	TBD	U	0	254	1Q FY07	0	NONE	0	NONE	0	254	0
DTE S - JSPDS Follow-on agent test	C/CPFF	Battelle, Columbus, OH	C	0	537	1Q FY07	0	NONE	0	NONE	0	537	0
JSSED													
DTE S - JSSED developmental test planning/execution	MIPR	AFOTEC, Kirtland AFB, NM	U	200	551	2Q FY07	0	NONE	2207	1Q FY09	0	2958	0
JSTDS SS													
OTE S - JSTDS-SS Initial Operational Test and Evaluation	MIPR	TBD	U	2294	4896	1Q FY07	0	NONE	0	NONE	0	7190	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE S - JSTDS-SS Decontaminant Shelf life extension testing	MIPR	TBD	U	200	200	1Q FY07	0	NONE	0	NONE	0	400	0
DTE S - JSTDS-SS Decontaminant testing of objective capabilities	MIPR	TBD	U	0	509	1Q FY07	0	NONE	0	NONE	0	509	0
DTE S - JSTDS-SS Decontaminant testing of objective capabilities	C/CPFF	Battelle, Columbus, OH	C	0	500	1Q FY07	0	NONE	0	NONE	0	500	0
Subtotal III. Test and Evaluation:					7447		434		3366		460	14401	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HRDS													
PM/MS S - HRDS Program Office Support	C/FFP	TBD	C	0	0	NONE	180	2Q FY08	267	2Q FY09	280	727	0
PM/MS S - HRDS Program Office Staff/Management	MIPR	TBD	U	0	0	NONE	320	1Q FY08	220	1Q FY09	220	760	0
JPID													
PM/MS S - Start program management for LPI development	MIPR	TBD	U	0	0	NONE	0	NONE	1950	1Q FY09	0	1950	0
JSPDS													
PM/MS S - JSPDS Programmatic Support	C/CPFF	TBD	C	174	174	1Q FY07	0	NONE	0	NONE	0	348	0
PM/MS S - JSPDS Programmatic Support	MIPR	TBD	U	174	200	1Q FY07	0	NONE	0	NONE	0	374	0
JSSED													
PM/MS S - JSSED Service Integrated Product Team Support	MIPR	TBD	U	488	483	1Q FY07	0	NONE	0	NONE	0	971	0
JSTDS SS													
PM/MS S - JSTDS-SS Programmatic Support	C/CPFF	TBD	C	500	108	1Q FY07	0	NONE	0	NONE	0	608	0
PM/MS S - JSTDS-SS Programmatic Support	MIPR	TBD	U	500	500	1Q FY07	0	NONE	0	NONE	0	1000	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	106	NONE	0	NONE	0	NONE	0	106	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:					1571		500		2437		500	6844	
Remarks:													
TOTAL PROJECT COST:					11010		6019		10300		1310	34724	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
HRDS																																
Market Survey									1Q																							
Milestone B											3Q																					
CHRP Down-selection Testing											3Q																					
CHRP Developmental Testing													1Q	—	3Q																	
RDS Component Developmental Testing													1Q	—	3Q																	
MS C Low Rate Initial Production																	1Q															
HRDS Initial Operational Test																		2Q	3Q													
Full Rate Production																					1Q	—	—	—	—	—	—	—	—	—	—	4Q
JSPDS																																
Pouch Packaging Retest			3Q	4Q																												
IOT&E		2Q	3Q																													
MS C (Full Rate Production)					1Q	2Q																										
Shelf Life Extension Testing					1Q	—	—	4Q																								
Follow-on live agent testing					1Q	—	—	4Q																								
JSSED																																
Phase 2 SDD contract award for pre-clean kits		2Q																														

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

D. Schedule Profile (cont):

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JSSED (Cont)																																
Phase 2 Pre-clean kit design and fabrication		2Q						4Q																								
Phase 2 Pre-clean kit testing DT/OT							3Q	4Q																								
Phase 2 MS C for Pre-clean kits									1Q																							
JMDS Wipe DT/OT					1Q					2Q																						
IPR JMDS Wipe										2Q																						
Production JMDS Wipe											3Q											2Q										
JMDS-SED SDD contract award								4Q																								
JMDS-SED design and development									1Q	2Q																						
JMDS-SED prototype fabrication and delivery										2Q		4Q																				
JMDS-SED DT													1Q			4Q																
JMDS-SED MS C for LRIP															3Q				3Q													
JMDS-SED OT																			3Q		1Q											
JMDS-SED FRP Decision																					1Q											
JMDS-SED production																						2Q								2Q		
JMDS-SED IOC																								4Q								

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JSSED (Cont)																																
JMDS-TAC SDD option award															3Q																	
JMDS-TAC prototype fabrication and delivery															3Q	4Q																
JMDS-TAC DT																	1Q	2Q														
JMDS-TAC IPR for LRIP																			3Q													
JMDS-TAC OT																					1Q	2Q										
JMDS-TAC FRP Decision																							3Q									
JMDS-TAC production																								4Q								3Q
JMDS-TAC IOC																										2Q						
JMDS-LPI SDD option award																			3Q													
JMDS-LPI prototype fabrication and delivery																			3Q	4Q												
JMDS-LPI DT																					1Q	2Q										
JMDS-LPI IPR for LRIP																							3Q									
JMDS-LPI OT																									1Q	2Q						
JMDS-LPI FRP Decision																											3Q					
JMDS-LPI production																											3Q					4Q

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JSSED (Cont)																																
JMDS-LPI IOC																														2Q		
JSTDS SS																																
MS C (LRIP)			3Q																													
DT II	1Q	—	—	4Q																												
Develop decontaminant shelf life surveillance program	1Q	—	—	4Q																												
IOT&E					1Q																											
Full Rate Production						2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
Live Agent Testing					1Q	—	—	4Q																								

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IP5	INDIVIDUAL PROTECTION (SDD)	19533	17610	12881	2509	0	0	0	0	0	52533

A. Mission Description and Budget Item Justification:

Project IP5 INDIVIDUAL PROTECTION (SDD): This project funds System Demonstration and Development (SDD) of individual protection equipment, such as the Joint Service Lightweight Integrated Suit Technology (JSLIST) ensemble, aimed at increasing individual 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 Nuclear, Biological and Chemical (NBC) environment with little or no degradation of his/her performance.

Efforts funded in this program include:

(1) The Joint Service Aircrew Mask (JSAM) is an incrementally developed Acquisition Category (ACAT) III program being conducted in two or more increments. The first increment addresses the majority of the Department of Defense's (DoD's) rotary wing aircraft (Type I) and the Integrated Helmet and Display Sight System (IHADSS) system (Type IA). The second increment addresses fixed wing aircraft (Type II) and unique Helmet Mounted Display (HMD) variants, such as the Top Owl (Type IB). The goal of JSAM 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 all Army, Air Force, Navy and Marine rotary and fixed-wing aircrew members. It 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. JSAM will be compatible with all below-the-neck CB ensembles and existing aircrew life support equipment. It will include a protective hood assembly, CB filter, blower assembly, and an intercom for ground communication. It will provide flame and thermal protection, provide hypoxia protection to 60,000 feet, demist/emergency demist and anti-drown features. Some variants will be capable of being donned in flight.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

(2) JSLIST Performance Enhancement (JPE) improves upon the JSLIST in use by U.S. ground and shipboard forces. The goal is to eliminate 1) the capability gaps for JSLIST identified by the Joint Requirement Office, 2) the commonly known vulnerabilities for JSLIST, and 3) to use JSLIST Operation Iraq Freedom (OIF) lessons learned to improve upon CB suit capabilities. The effort will include design improvements to reduce weight, bulk, and heat stress. A single camouflage pattern for the suit is advocated in order to increase inventory efficiency and to reduce operational risk.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JS AIRCREW MASK (JSAM)	14475	16092	12881	2509
RDT&E Articles (Quantity)	274	250	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JSAM - FY 06 - Continued planning of Development Test (DT) and Operational Test (OT) activities for Rotary Wing (Type I), Integrated Helmet and Display Sighting System (IHADSS) Apache (Type IA), Fixed Wing (Type II) variants and unique Helmet Mounted Display (HMD) systems such as Top Owl (Type IB). Initiated DT for Types I & IA utilizing 169 Rotary Wing assets at $2,802 average unit cost and 105 IHADSS JSAM assets at $3,520 average unit cost. FY 07 - Complete DT and initiate/complete OT for Types I & IA. Initiate DT for Types II & IB utilizing 175 Fixed Wing assets at $3,180 average unit cost and 75 Top Owl JSAM assets at $3,395 average unit cost. FY 08 - Complete DT and initiate OT for Types II & IB. FY 09 - Complete OT for Types II & IB.	5824	9633	6662	429
JSAM - FY 06 - Continue contract and government program management, logistics and sustainment planning. FY 07 - Complete Milestone C documentation for Types I & IA. FY 08/09 - Complete Milestone C documentation for Types II & IB. Conduct FRP decision process for Types II & IB.	4593	4195	4360	1600

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JSAM - FY 06/07/08/09 - Continue system design, engineering and fabrication activities on all required variants; continue to develop production processes and ensure tooling and equipment are adequate to fabricate production units.	4058	2264	1859	480
Total	**14475**	**16092**	**12881**	**2509**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
PROTECTIVE CLOTHING (JSLIST)	5058	1347	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JSLIST - FY 06 - Completed DT/OT test and evaluation of multiple ensemble components.	2100	0	0	0
JSLIST - FY 06 - Completed RFI evaluation for footwear and testing for SOCOM unique footwear.	201	0	0	0
JSLIST - FY 06 - Conducted producibility/reproducibility production base analysis. This effort included all configuration management work and the work necessary to ensure that the design is producible (and reproducible with minimum variance) with new production methodologies.	800	0	0	0
JSLIST - FY 06 - Purchased prototypes and conducted initial design screening tests. This screening test allowed for informed design selection decisions.	657	0	0	0
JSLIST - FY 06 - Initiated design of a new lightweight protective seven day suit to support Special Forces operational requirements.	1300	0	0	0
JSLIST - FY 07 - Conduct JPE design field testing.	0	397	0	0
JSLIST - FY 07 - Conduct mission DT and Field User Evaluations (FUE) for JPE with service personnel performing specific job specialties while wearing production representative suits.	0	850	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JSLIST - FY 07 - Purchase production representative JPE necessary for all FUE.	0	100	0	0
Total	**5058**	**1347**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SBIR/STTR	0	171	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SBIR - FY 07 - Small Business Innovative Research.	0	171	0	0
Total	**0**	**171**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
IP7 INDIVIDUAL PROTECTION OPERATIONAL SYS DEV	0	0	0	2240	4436	4837	5380	4203	Cont	Cont
JI0002 JT SVC AIRCREW MASK (JSAM)	700	7970	21736	39175	15852	0	0	0	0	85433
JI0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM/JSCESM)	27779	32243	45842	42963	42095	42774	44525	49611	Cont	Cont
JI0015 JOINT PROTECTIVE AIRCREW ENSEMBLE (JPACE)	23808	0	11027	0	0	0	0	0	0	34835
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	9258	4934	9921	0	0	0	0	0	0	24113
MA0400 PROTECTIVE CLOTHING	37135	31277	39011	36838	27451	18141	18485	9582	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

D. Acquisition Strategy:

JSAM

The JSAM program acquisition strategy for full and open competition for a Systems Development and Demonstration (SDD) contract, with follow-on production options, was conducted IAW FAR 15 (as supplemented). The initial contract was awarded on November 26, 2002 to Scott Aviation, now AVOX Systems, Inc. (a.k.a. AVOX).

Due to contractual issues, on September 1, 2004 the JSAM contract was restructured from an all-encompassing, multi-variant development to an incremental variant development. In November 2004, the JPEO approved the program rebaseline that utilized this approach. The revised Acquisition Program Baseline Agreement (APBA) identifies Increment 1 as the Rotary Wing (RW) and Integrated Helmet and Display Sighting System (IHADSS or Apache) variant, developed and produced by AVOX. RW/IHADSS will be fielded first. Appropriate production options will be exercised.

Increment 2 is the Fixed Wing (FW) variant; Increment 3 is the Top Owl (TO) variant. Due to mounting RW/IHADSS contract issues, the Fixed Wing (FW) and Top Owl (TO) development efforts were recompeted. The FW/TO development contract (with production options) was awarded 13 April 2006 to GENTEX Respiratory Products.

Cost, schedule and performance is the key to program success. This acquisition strategy supports the Government's intent to continue pursuing competition and reduce program risk.

PROT CLTH

The JSLIST acquisition strategy employs an evolutionary approach, any deficiencies found in the JSLIST ensemble will be addressed to support the warfighters' mission and capabilities requirements using competitive material search.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
HW S - Contractor Development Types I/IA	C/CPAF	AVOX, Lancaster, NY	C	21048	347	2Q FY07	0	NONE	0	NONE	0	21395	7209
SW SB - Contractor Development Type II/Top Owl	C/FPI	Gentex, Rancho Cucamonga, CA	C	2183	583	2Q FY07	1182	2Q FY08	176	2Q FY09	0	4124	0
Subtotal I. Product Development:					930		1182		176		0	25519	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
TD/D SB - JSAM Logistics, Training, and Data	C/CPAF	AVOX, Lancaster, NY	C	1651	1104	2Q FY07	0	NONE	0	NONE	10	2765	188
TD/D SB - TD/D SB - JSAM Logistics, Training, and Data	C/FPI	Gentex, Rancho Cucamonga, CA	C	215	1063	2Q FY07	2677	2Q FY08	1093	2Q FY09	0	5048	0
Subtotal II. Support Costs:					2167		2677		1093		10	7813	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
OTHT SB - Govt Dev Test	MIPR	Various	U	8290	3787	2Q FY07	3637	2Q FY08	0	NONE	7174	22888	92
OTE S - Govt Operational Test	MIPR	Various	U	3375	4220	2Q FY07	828	2Q FY08	0	NONE	4046	12469	404
OTHT SB - Contractor Test and Integration Type I/IA	PO	AVOX, Lancaster, NY	C	2555	519	2Q FY07	0	NONE	0	NONE	0	3074	185
OTHT SB - Contractor Test & Integration Type II/Top Owl	PO	Gentex, Rancho Cucamonga, CA	C	214	389	2Q FY07	1182	2Q FY08	263	2Q FY09	0	2048	0
PROT CLTH													
OTHT SB - Ensemble component DT/OT	MIPR	Various	U	10052	1347	2Q FY07	0	NONE	0	NONE	0	11399	0
Subtotal III. Test and Evaluation:					10262		5647		263		11220	51878	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
PM/MS C - Program Management/Management Support	MIPR	Various	U	9705	2747	2Q FY07	2368	2Q FY08	829	2Q FY09	0	15649	2420
PM/MS S - Contractor Program Management	C/CPAF	AVOX, Lancaster, NY	C	4113	944	2Q FY07	0	NONE	0	NONE	0	5057	1163
PM/MS S - Contractor Program Management	C/FPI	Gentex, Rancho Cucamonga, CA	C	648	389	2Q FY07	1007	2Q FY08	148	2Q FY09	179	2371	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	171	NONE	0	NONE	0	NONE	0	171	0
Subtotal IV. Management Services:					4251		3375		977		179	23248	
TOTAL PROJECT COST:					17610		12881		2509		11409	108458	

Remarks:

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JSAM																																
SDD	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q																
Types I/IA Development Test Readiness Review (DTRR)	>>	2Q																														
MS C/FRP Decision Type 1A							3Q																									
MS C/FRP Decision Type 1									1Q																							
Fixed Wing (FW, Type II) DTRR								4Q	—	2Q																						
FW, Type II Milestone C												4Q																				
FW, Type II FRP Decision															3Q																	
Top Owl (TO, Type IB) DTRR											3Q																					
Top Owl FRP Decision																4Q																
PROT CLTH																																
JSLIST - Overgarment Production	>>	—	—	—	—	—	—	4Q																								
JSLIST - Block II Glove Conduct Developmental Test (DT)/Operational Test (OT)	>>	—	—	4Q																												
JSLIST - Block II Glove MS C					1Q																											
JSLIST - Developmental Test (DT)/Operational Test (OT) IFS	>>	—	—	4Q																												

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IP5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
PROT CLTH (Cont)																																
JSLIST - Milestone C IFS					1Q																											
JSLIST - Initial Operational Test and Evaluation (IOT&E) and DT (AFS)	>>	—	—	4Q																												
JSLIST - Milestone C AFS						2Q																										
JSLIST - Performance Enhancement Initiation - Overgarment		2Q	—	4Q																												
JSLIST - Performance Enhancement DT - Overgarment					1Q	—	3Q																									
JSLIST - Performance Enhancement FUE - Overgarment								4Q																								

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IS5	INFORMATION SYSTEMS (SDD)	74728	24951	47465	39453	27610	17652	14893	25293	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project IS5 INFORMATION SYSTEMS (SDD): 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) Joint Operational Effects Federation (JOEF), (3) the Joint Warning and Reporting Network (JWARN), and (4) the JPEO-CBD Software Support Activity (SSA).

The JEM will be DoD's only accredited model for predicting hazards associated with the release of contaminants into the environment. JEM will be developed in separate increments and will be capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents (Increment 1), high altitude releases, urban NBC environments (Increment 2), building interiors, and human performance degradation (Increment 3). Battle space 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 will operate in an integrated fashion with operational and tactical Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems, and in a standalone mode. JEM will interface and communicate with the other programs such as JWARN, JOEF, weather systems, intelligence systems, and various databases.

JOEF will be a near real-time course of action analysis tool developed in three increments using a detailed NBC hazard prediction model. Each increment supports Aerial Ports of Debarkation (APODs), Sea Ports of Debarkation (SPODs), mobile forces, medical and automated Tactics, Techniques and Procedures (TTPs) in various levels of fidelity. Increment 1 will support deliberate planning for operational and strategic users in a C4ISR common operating environment (COE); Command and Control Personal Computers (C2PC); and crisis planning for the operational users in a COE.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

The JWARN will provide standard integration and analysis of NBC detection information with C4ISR on the battlefield automating the NBC warning and reporting processes currently performed manually throughout the Services. The JWARN will collectively consist of Commercial off-the-shelf (COTS) materiel and JWARN software for C4ISR. JWARN is being developed for deployment with NBC detectors in the following battlefield applications: combat and armored vehicles, tactical vehicles, vans, shelters, shipboard application, area warning, semi-fixed sites, and fixed sites. JWARN ID was the initial acquisition and fielding of COTS and Government off-the-shelf (GOTS) software to standardize NBC warning and reporting throughout the Armed Forces. JWARN will provide automatic NBC message capability at the Global Command and Control System (GCCS) level. JWARN will integrate NBC legacy and future detector systems, NBC Warning and Reporting software modules, and NBC battle space management modules in the Joint Services C4I systems. In addition to JWARN development, a JWARN Initial Capability (JIC) will be developed and provided to warfighters in order to support refinement of Service CONOPS and provide feedback to the JWARN developer. Pre-Planned Product Improvements (P3I) will investigate new detectors/sensors and software changes to Service C4I systems.

The JPEO-CBD SSA is a JPEO-CBD user developmental support and service organization supporting all JPMs and JPEO-CBD Directorates, and providing enterprise-wide services and coordination to facilitate net-centric interoperability. The SSA provides the CBRN Warfighter with Joint service solutions for Information Assurance, Verification, Validation and Accreditation (VV&A), and Data Management; interoperable and integrated net-centric, service-oriented, composable solutions for CBD; and infusion of latest technologies into programs of record. CBRN user community and related communities of interest have need for CBRN "plug and play" capability to allow interoperability and re-configurability across the enterprise. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT EFFECTS MODEL	20996	1730	14654	14884
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JEM - FY 06 - Completed software development, migration and integration. Merged legacy hazard prediction models (HPAC, VLSTrack and D2Puff) into JEM baseline and architecture. Performed software development to enable JEM to operate on Windows (2000 and XP) as well as Service C4I systems (GCCS-J, GCCS-M, C2PC, etc). Developed appropriate interfaces with JWARN to ensure interoperability. Developed a net-centric, web-based application.	8558	0	0	0
JEM - FY 06 - Conducted Operational Assessments (OA) with the Service Operational Test Agencies (OTA). Prepared for independent operational test and evaluation.	623	0	0	0
JEM - FY 06 - Performed Development Test (DT). Confirmed that JEM transitioned legacy S&T code correctly and conducted test in support of accreditation and operational test. Completed interoperability, network and system security certifications on 12 different service C4I/host systems and three computer operating systems (Windows 2000, XP, and UNIX).	2987	0	0	0
JEM - FY 06 - Conducted Milestone C. Finalized computer Based Training (CBT) and courseware. Completed infrastructure and stand up of software support capability and 24/7 capable Help Desk. Developed deployment plan for JEM software to include training.	2856	0	0	0
JEM - FY 06/08/09 - Support operational demonstrations and exercises.	47	0	46	48
JEM - FY 06/07/08/09 - Conduct independent verification, validation, and accreditation of JEM software and models.	1058	155	290	842
JEM - FY 06/07/08/09 - Complete System Engineering Tasks to include requirements analysis, architecture analysis, configuration management, human-system integration, security analysis, and DoD architecture artifact development.	2300	373	781	468
JEM - FY 06/07/08/09 - Continue JEM program financial management, scheduling, planning and reporting.	2567	597	1856	1912
JEM - FY 07/08/09 - Perform software maintenance on existing JEM baseline. Provide JEM upgrades in parallel with evolving C4I host system upgrades. Continue development of additional capabilities and upgrades to models within JEM. Support requests for special configurations of JEM (North American Aerospace Defense Command (NORAD), US Northern Command (NORTHCOM), US Strategic Command (STRATCOM), etc).	0	605	2247	2387

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JEM - FY 08 - Conduct Follow-on Test and Evaluation (FOT&E).	0	0	1213	0
JEM - FY 08 - Revalidate Increment 2 technology analysis from FY04, develop prototype options for down-select and prepare for Increment 2 Milestone B.	0	0	200	0
JEM - FY 08/09 - Science and Technology transition and development of JEM Increment 2 software. Analysis of existing and future software architecture. Migration of JEM software to next generation host platforms. Initiate and complete Increment 2 system development and demonstration, incorporating Urban Dispersion Modeling, Missile Intercept, Backtracking to Source, STRATCOM Support, and Human Effects.	0	0	6025	6299
JEM - FY 08/09 - Conduct OA with the service OTAs. Prepare for independent operational test and evaluation.	0	0	1000	1030
JEM - FY 08/09 - Perform DT. Confirm that JEM transitioned legacy S&T code and models correctly and conduct test in support of follow-on accreditation and operational test. Complete interoperability, network and system security certifications of multiple service C4I/host systems and three computer operating systems (Windows 2000, XP, and UNIX).	0	0	590	1345
JEM - FY 08/09 - Update Computer Based Training (CBT), instructor lead training and courseware. Update infrastructure and software support capability. Update deployment plan and other applicable supporting documentation for JEM.	0	0	406	553
Total	**20996**	**1730**	**14654**	**14884**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
JOINT OPERATIONAL EFFECTS FEDERATION	16234	8078	4814	4731
RDT&E Articles (Quantity)	0	0	121	1085

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JOEF - FY 06/07/08/09 - Provide Program Management Support, including Systems Engineering, Warfighter, Test and Evaluation, and Integrated Logistics Support Integrated Project Teams.	3227	1819	1090	1024
JOEF - FY 06/07/08/09 - Develop software for deliberate and crisis planning for Seaports of Debarkation (SPOD), Aerial Ports of Debarkation (APOD) and automated Tactics, Techniques and Procedures (TTP), including Common Operating Environment (COE) and Command and Control Personal Computer (C2PC) interfaces.	3652	1601	787	649
JOEF - FY 06/07/08/09 - Develop mobile force capability to meet Service requirements.	2146	1597	742	593
JOEF - FY 06/07/08/09 - Develop and test interoperability of JOEF software with required systems.	3801	1665	687	628
JOEF - FY 06/07/08/09 - Plan and conduct developmental and operational testing.	1443	633	815	1022
JOEF - FY 06/07/08/09 - Plan and provide Integrated Logistics Support, including training, to the JOEF system.	396	151	183	105
JOEF - FY 06/07/08/09 - Plan and conduct software validation and verification.	133	94	177	410
JOEF - FY 06/07/08/09 - Continue the integration with JEM, JWARN and database management systems.	1436	518	333	300
Total	**16234**	**8078**	**4814**	**4731**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT WARNING & REPORTING NETWORK (JWARN)	33119	14903	23919	16686
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JWARN - FY 06 - Developed the Joint Component Interface Device (JCID) wired, stand-alone variant.	5165	0	0	0
JWARN - FY 06 - Conducted JCID acceptance tests.	2995	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
JWARN - (T&E Capability) - FY 06 - Developed a high bandwidth data transfer backbone to transmit and integrate test data for rapid analysis across multiple users and test sites.	1000	0	0	0
JWARN - FY 06 - Conducted Increment 2 Interoperability Tests (IOT).	3000	0	0	0
JWARN - FY 06 - Designed and integrated JCID functionality.	2500	0	0	0
JWARN - FY 06/07 - Conduct Multi-Service Operational Test & Evaluation (MOT&E) event planning.	1502	750	0	0
JWARN - FY 06/07/08/09 - Conduct Increment 2 Developmental Test (DT).	1817	1520	2100	1515
JWARN - FY 06/07/08/09 - Generate comprehensive DT test results reports.	602	350	425	375
JWARN - FY 06/07/08/09 - Continue JWARN program management and oversight.	2277	1972	2051	2310
JWARN - FY 06/07/08/09 - Design, Develop, and integrate software and hardware for a Functional Operational Test (FOT) Simulator demonstration system.	2000	190	175	160
JWARN - FY 06/07/08/09 - Complete Increment 1 development and Increment 2 planning and development.	7594	3095	7750	4500
JWARN - FY 06/07/08/09 - Conduct demonstrations and exercises.	130	60	50	70
JWARN - FY 06/07/08/09 - Develop Network Centric Enterprise Services (NCES)/Net Ready (NR)/Key Performance Parameters (KPP) enhancements.	2102	1000	1500	1000
JWARN - FY 06/07/08/09 - Develop the wireless JCID as required by the services Urgent Needs Statement (UNS).	435	950	1250	2603
JWARN - FY 07 - Conduct JCID First Article Test (FAT).	0	220	0	0
JWARN - FY 07 - Conduct Milestone C review.	0	940	0	0
JWARN - FY 07 - Coordinate JCID Low Rate Initial Production (LRIP).	0	593	0	0
JWARN - FY 07/09 - Conduct Increment 2 Operational Assessment (OA) 1 & 2.	0	1741	0	2750
JWARN - FY 07/09 - Generate comprehensive OA 1 & 2 reports.	0	527	0	550
JWARN - FY 07/08 - Conduct MOT&E.	0	995	4600	0
JWARN - FY 08 - Generate MOT&E test results and reports.	0	0	525	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JWARN - FY 08 - Conduct Functional Qualification Test (FQT).	0	0	2968	0
JWARN - FY 08 - Generate FQT test results and reports.	0	0	525	0
JWARN - FY 09 - Coordinate JCID Full Rate Production.	0	0	0	853
Total	**33119**	**14903**	**23919**	**16686**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SOFTWARE SUPPORT ACTIVITY	4379	0	4078	3152
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SSA - FY 06 - Established SSA Charter, Management Plans, Processes and Procedures.	335	0	0	0
SSA - FY 06/08/09 - Provide Policies, Standards & Guidelines for IT Systems Development.	292	0	312	267
SSA - FY 06/08/09 - Develop and maintain a Validated Technical C4I Architecture for JPEO CBD.	632	0	651	482
SSA - FY 06/08/09 - Provide Support Services for Architecture, Data, Help Desk, Integration & Test, and Standards and Policies.	899	0	604	378
SSA - FY 06/08/09 - Support Common Data Model Development for the CBRN Community.	404	0	396	388
SSA - FY 06/08/09 - Develop and maintain Enterprise IT Support Plan.	174	0	176	237
SSA - FY 06/08/09 - Establish and provide assistance services for developing JPEO-CBD programs.	547	0	626	468
SSA - FY 06/08/09 - Establish and maintain an Information Assurance System Certification Testing and Evaluation Program for the JPEO-CBD Enterprise.	404	0	476	308

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SSA - FY 06/08/09 - Establish and maintain a repository for applicable Enterprise policies, standards, and guidelines.	52	0	51	78
SSA - FY 06/08/09 - Establish and provide Technology Transition Support Services.	149	0	234	198
SSA - FY 06/08/09 - Establish Enterprise VV&A guidelines and provide process assistance.	491	0	552	348
Total	**4379**	**0**	**4078**	**3152**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SBIR/STTR	0	240	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SBIR - FY 07 - Small Business Innovative Research.	0	240	0	0
Total	**0**	**240**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	6112	6517	6744	6944	6628	7000	8200	5679	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	1996	2050	3534	4394	0	0	0	0	0	11974
JC0209 JOINT OPERATIONAL EFFECTS FEDERATION (JOEF)	0	0	3611	3328	3523	0	0	0	0	10462

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. It will be fielded in increments of capabilities. Each increment will retain the functionality of the preceding increment. JEM is expected to develop 3 distinct increments of software. It will make full use of the JPM IS Initial Capability (JIC) to demonstrate and test the system. JEM will define and publish its web-services interface; the JEM interface will be the same on all systems, utilizing data definitions from the approved CBRN data model as appropriate. A cost plus award fee contract is planned for the follow-on JEM contract for integration and development.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

JWARN

The Joint Warning and Reporting Network (JWARN) revised Acquisition Strategy (AS) is based on the contract awarded on July 15, 2003 to Northrop Grumman - Information Technology and updates key program milestones and events accordingly. The revised AS accelerates the development effort to provide a JWARN Initial Capability (JIC) providing a limited, end-to-end JWARN capability to the warfighter by 1QFY05. This acceleration will be accomplished by leveraging the technology of an extant end-to-end JIC. The JIC was completed early in the contract cycle, was demonstrated in 2QFY04, and will be made available to key users by 1QFY05. Usage of this initial integrated capability by the warfighter will generate operational feedback to the JWARN developer and provide a venue to validate and refine Measures of Performance (MOPs) and Measures of Effectiveness (MOEs). Further, it will provide an opportunity to refine Service Concepts of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTPs) for the system. The revised strategy further accelerates the delivery of the full system by developing a single increment JWARN-Full Capability (JWARN-FC) system vice development in two separate Blocks. This acceleration is achieved thru the concurrent integration of sensor connectivity initially planned for Increment 3. The revised strategy eliminates the Increment 2 Milestone Decision process as well as the Increment 2 Development Testing/Operational Assessment (DT/OA). This shortens the delivery schedule for the full capability of JWARN by approximately 12 months.

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] .

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

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].

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
SW SB - JEM Hazard Prediction Model Development and Integration	C/CPAF	TBD	C	6815	605	2Q FY07	8272	2Q FY08	8686	2Q FY09	0	24378	0
JOEF													
SW S - Engineering Builds - Development, Design, Coding	C/CPIF	Cubic Applications, Lacy, WA	C	9701	4863	2Q FY07	2136	2Q FY08	1574	2Q FY09	0	18274	0
SW S - Integration & Interoperability	MIPR	Various	U	3742	518	2Q FY07	333	2Q FY08	266	2Q FY09	0	4859	0
JWARN													
SW S - JWARN System Development and Demonstration	C/FPI	Northrop Grumman - Winterpark, FL	C	29522	5895	2Q FY07	0	NONE	0	NONE	0	35417	0
SW S - JWARN System Development and Demonstration	C/CPIF	TBD	C	0	0	NONE	4000	2Q FY08	3417	2Q FY09	0	7417	0
SSA													
Product Development	MIPR	SPAWAR Systems Center, San Diego, CA	U	1231	0	NONE	1328	1Q FY08	1062	1Q FY09	0	3621	0
Subtotal I. Product Development:					11881		16069		15005		0	93966	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
ES S - IPT - System Engineering, Logistics and Program Support	MIPR	Various	U	11665	373	2Q FY07	1433	2Q FY08	1069	2Q FY09	0	14540	0
JOEF													
TD/D SB - System Engineering, Warfighter IPTs	MIPR	Various	U	2229	498	2Q FY07	237	2Q FY08	209	2Q FY09	0	3173	0
ILS S - ILS Planning and Oversight	MIPR	Various	U	456	152	1Q FY07	99	1Q FY08	359	1Q FY09	0	1066	0
ILS S - JOEF ILS including Training	MIPR	TBD	U	105	55	1Q FY07	86	1Q FY08	298	1Q FY09	0	544	0
SSA													
Support Costs	MIPR	SPAWAR Systems Center, San Diego, CA	U	1452	0	NONE	1234	1Q FY08	964	1Q FY09	0	3650	0
Subtotal II. Support Costs:					1078		3089		2899		0	22973	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
DTE S - Hazard Prediction Model Developmental Test	MIPR	Various	U	4194	0	NONE	590	1Q FY08	1345	1Q FY09	0	6129	0
OTE S - Hazard Prediction Model Developmental Test	MIPR	Various	U	1147	0	NONE	2213	2Q FY08	1030	2Q FY09	0	4390	0
OTHT S - Hazard Prediction Model - IV&V	MIPR	Various	C	1221	155	2Q FY07	290	2Q FY08	842	2Q FY09	0	2508	0
JOEF													
DTE S - Developmental Test Planning	MIPR	Various	U	2378	603	2Q FY07	541	2Q FY08	614	2Q FY09	0	4136	0
OTHT S - JOEF Independent Verification and Validation	MIPR	Various	C	338	93	2Q FY07	176	2Q FY08	349	2Q FY09	0	956	0
OTE S - Operational Test Planning	MIPR	TBD	U	0	31	1Q FY07	272	1Q FY08	298	1Q FY09	0	601	0
JWARN													
OTHT SB - JWARN Block II Development Test	MIPR	Various	U	9387	5695	2Q FY07	10051	2Q FY08	6275	2Q FY09	0	31408	0
SSA													
Test and Evaluation	MIPR	SPAWAR Systems Center, San Diego, CA	U	895	0	NONE	1028	1Q FY08	656	1Q FY09	0	2579	0
Subtotal III. Test and Evaluation:					6577		15161		11409		0	52707	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
PM/MS S - Program Office - Planning & Programming	MIPR	SPAWARSYSCOM, San Diego, CA	U	1818	597	1Q FY07	1856	1Q FY08	1912	1Q FY09	0	6183	0
JOEF													
PM/MS S - Program Office - Planning and Programming	MIPR	Various	U	4910	1265	1Q FY07	934	1Q FY08	764	1Q FY09	0	7873	0
JWARN													
PM/MS S - JWARN Management Support	MIPR	Various	U	6133	3313	2Q FY07	9868	2Q FY08	6994	2Q FY09	0	26308	0
SSA													
Management Services	MIPR	SPAWAR Systems Center, San Diego, CA	U	801	0	NONE	488	1Q FY08	470	1Q FY09	0	1759	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	240	NONE	0	NONE	0	NONE	0	240	0
Subtotal IV. Management Services:					5415		13146		10140		0	42363	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

TOTAL PROJECT COST:		24951		47465		39453		0	212009	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
JEM								
Increment 1 - Software Development	>> — 4Q							
Increment 1 - Developmental Test (DT) (Contr)	>> — 4Q							
Increment 1 - DT (Government)	>> —	—	—	— 4Q				
Increment 1 - Software Maintenance	>> —	—	—	— 4Q				
Increment 1 - Establish, Train, Stand Up Software Support Capability	>> — 3Q							
Increment 1 - M/S C		4Q						
Increment 1 - Production and Deployment		4Q	—	— 3Q				
Increment 1 - Limited Deployment Phase		4Q	— 4Q					
Increment 1 - Operational Testing (OT)		4Q						
Increment 1 - Initial Operational Capability (IOC)			2Q — 4Q					
Increment 1 - Full Rate Production			2Q — 4Q					
Increment 1 - Follow-on Test and Evaluation			3Q —	— 2Q				
Increment 2 - Software Development			1Q —	—	— 2Q			
Increment 2 - DT (Cont)			3Q —	—	— 2Q			

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JEM (Cont)																																
Increment 2 - DT (Government)											3Q	—	—	—	—	—	—	2Q														
JOEF																																
Prototype Development	1Q																															
Focused Technology Assessment III (Mobile Forces & Bus. Process Mgt. Models)	1Q																															
Increment 1 - Milestone B	1Q																															
Increment 1 - Award Systems Development and Demonstration (SDD) Contract		2Q																														
Increment 1 - Software Development		2Q	—	—	—	—	3Q																									
Increment 1 - Tech Reviews		2Q	—	—	—	—	—	—	1Q																							
Increment 1 - DT Build 1					1Q																											
Increment 1 - Operational Assessment								4Q																								
Increment 1 - DT Build 2							3Q																									
Increment 1 - Multi Operational Test & Evaluation (MOTE)										2Q																						
Increment 1 - Milestone C (Limited Deployment)												4Q																				

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JOEF (Cont)																																
Increment 1 - Initial Operational Capability (IOC)												4Q																				
Increment 1 - Full Operational Capability (FOC)																4Q																
JWARN																																
JWARN Inc 1 - SDD Performance	>>	2Q																														
JWARN Inc 1 - JIC Deployment	>>	2Q																														
JWARN Inc 1 - JCID Design and Development	>>	2Q																														
JWARN Inc 1 - Development Test			3Q	4Q																												
JWARN Inc 1 - Operational Assessment				4Q	—	2Q																										
JWARN Inc 1 - Milestone C						2Q	3Q																									
JWARN Inc 1 - JCID Low Rate Initial Production (LRIP) Contract Award							3Q	—	1Q																							
JWARN Inc 1 - First Article Test							3Q	4Q																								
JWARN Inc 1 - Initial Operational Test and Evaluation (IOT&E)									1Q	2Q																						

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JWARN (Cont)																																
JWARN Inc 1 - Multiservice Operational Test & Evaluation									1Q	2Q																						
JWARN Inc 1 - Full Rate Production Milestone Decision												4Q																				
JWARN Inc 1 - Full Rate Production												4Q												4Q								
JWARN Inc 1 - Full Operational Capability																		2Q														
SSA																																
Establish SSA Charter, Management Plans, Processes, Procedures	>>	2Q																														
Develop Enterprise IT Support Plan	>>			4Q																												
Begin support services for Architecture, Data, Help Desk, Integration & Test, and Standards and Policies	>>					2Q																										
Establish CM Services for the Enterprise JCBRND Products	>>	2Q																														
Provide Data Model Implementation Guidance	1Q																															4Q

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
SSA (Cont)																																
Establish an Information Assurance Support Capability	1Q	—	—	—	—	2Q																										
Provide Enterprise Architecture Products and Services		2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
Demonstrate Technology Transition Capabilities						2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
Provide Information Assurance Site Compliance Testing			3Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
Provide Integration and Test, M&S, VV&A Certification and Accreditation		2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
Establish Technology Transition Support Services	1Q	—	—	—	—	2Q																										

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MB5	MEDICAL BIOLOGICAL DEFENSE (SDD)	49964	67358	69039	65396	57561	160884	143432	142500	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MB5 MEDICAL BIOLOGICAL DEFENSE (SDD): This project funds the System Development and Demonstration (SDD) phase of vaccines, drugs, and diagnostic medical devices that are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. Efforts for medical biological defense product development involve production scale-up studies, consistency manufacturing, and expanded human safety studies. The results of these efforts, and those conducted during the SDD phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. Upon FDA licensure, the product will transition to full-scale licensed production. Products to be developed under this program include Recombinant Botulinum and Plague vaccines.

The Critical Reagents Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/select biological threat agent and genomic reference materials, and DNA biological detection requirements from Technology Development thru production. The CRP ensures the availability of standardized high-quality reagents throughout the life-cycle of all biological warfare (BW) detection/identification systems. The CRP supports all aspects of manufacturing "scale-up" of developmental protocols for CRP developed products, including maintenance of repositories and validation laboratories. Supported systems include the Biological Integrated Detection System (BIDS), Joint Biological Agent and Identification System (JBAIDS), and the Joint Biological Point Detection System (JBPDS) Increments 1 and 2. This program also supports the development and manufacture of individual handheld Immunochromatographic Assays (HHA), electrochemiluminescence (ECL) immunoassays, polymerase chain reaction (PCR) genomic assays, and the DoD biological sampling kits. This program results in improved identification performance and ensures comparable results across disparate systems.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

The Joint Biological Agent Identification and Diagnostic System (JBAIDS) is a reusable, portable, modifiable biological agent identification and diagnostic system. JBAIDS will enhance force protection by providing commanders and medical personnel with the capability to determine appropriate treatment, effective preventive measures, and prophylaxis, in response to the presence of biological and toxin agents. JBAIDS will be configured to support reliable, fast, and specific identification of biological and toxin agents from a variety of clinical and environmental sources.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
CRITICAL REAGENTS PROGRAM	10487	3161	10232	7604
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
CRP - FY 06/07/08/09 - Continued expansion of select biological threat agent reference materials.	5733	1103	3500	2217
CRP - FY 06/07/08/09 - Continue development of electrochemiluminescence (ECL) immunoassays and polymerase chain reaction (PCR) genomic assays.	3179	619	1423	1187
CRP - FY 06/07/08/09 - Initiate and continue expansion of a formal Quality Assurance/Quality Control (QA/QC) medical and non-medical, systems engineering/Lean Six Sigma, validation, Developmental Testing (DT), and Operational Testing (OT) program to encompass the transition and fielding of biological detection assays.	1575	575	4852	3777
CRP - FY 07/08/09 - Initiate and complete International Organization for Standardization (ISO) 17025 guidelines into select biological threat agent reference materials.	0	864	457	423
Total	**10487**	**3161**	**10232**	**7604**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM	6968	4270	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JBAIDS Block I - FY 06 - Initiated and completed Qiagen Flow kit development.	3343	0	0	0
JBAIDS Block I - FY 06/07 - Initiate and complete process control development.	3625	1889	0	0
JBAIDS Block I - FY 07 - Conduct follow-on test and evaluation.	0	1044	0	0
Congressional Interest Item - FY 06 - Rapid Identification of Biological Warfare Agents.	0	1337	0	0
Total	**6968**	**4270**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
BOTULINUM VACCINE	0	18330	18753	23898
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JVAP - Recombinant Botulinum Vaccine - FY 07/08/09 - Continue non-clinical testing.	0	4767	1900	2000
JVAP - Recombinant Botulinum Vaccine - FY 07/08/09 - Continue and complete manufacturing process validation and validation of formulation, fill and finish process for serotypes A and B.	0	6216	3400	2600
JVAP - Recombinant Botulinum Vaccine - FY 07/08/09 - Initiate and complete execution of Phase 1b clinical trial.	0	4200	3300	3400

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JVAP - Recombinant Botulinum Vaccine - FY 08 - Conduct Milestone B review and enter into Systems Development and Demonstration acquisition phase.	0	0	100	0
JVAP - Recombinant Botulinum Vaccine - FY 08/09 - Initiate and complete manufacture of consistency lots of vaccine.	0	0	3153	11398
JVAP - Recombinant Botulinum Vaccine - FY07 - Conduct planning for Phase 2 clinical trial. FY08 - Initiate and continue execution of Phase 2 clinical trial.	0	3147	6900	4500
Total	**0**	**18330**	**18753**	**23898**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
ENCEPHALITIS VACCINE	250	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
JVAP - Equine Encephalitis Vaccine - FY 06 - Continue manufacturing process development.	250	0	0	0
Total	**250**	**0**	**0**	**0**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
PLAGUE VACCINE	29833	39306	40054	33894
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JVAP - Plague Vaccine - FY 06/07/08/09 - Continue and complete non-clinical studies of US candidate.	1566	5680	6000	4900
JVAP - Plague Vaccine - FY 07 - Complete Phase 1 clinical trial of US candidate.	0	1000	0	0
JVAP - Plague Vaccine - FY 06 - Continue and complete large scale manufacturing process development of US candidate.	985	10920	0	0
JVAP - Plague Vaccine - FY 06 - Initiated large scale manufacturing process development and validation of UK candidate.	20000	0	0	0
JVAP - Plague Vaccine - FY 06/07/08/09 - Initiate and complete Phase 2 clinical trial of US candidate.	7282	12635	10000	4266
JVAP - Plague Vaccine - FY 07/08 - Initiate and complete large scale manufacturing process validation of US candidate.	0	9071	8400	0
JVAP - Plague Vaccine - FY 08 - Conduct down-select decision to single candidate.	0	0	100	0
JVAP - Plague Vaccine - FY 08/09 - Initiate and complete manufacturing of consistency lots of vaccine of US candidate.	0	0	15554	10000
JVAP - Plague Vaccine - FY 09 - Initiate Phase 3 clinical trial.	0	0	0	14628
JVAP - Plague Vaccine - FY 09 - Conduct Milestone C.	0	0	0	100
Total	**29833**	**39306**	**40054**	**33894**

	FY 2006	FY 2007	FY 2008	FY 2009
BIOLOGICAL VACCINES	2426	1634	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
TT Bio - Congressional Interest Item - FY 06/07 - ParalellaVax Rapid Vaccine Testing Technology.	2426	1634	0	0
Total	**2426**	**1634**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	657	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	657	0	0
Total	**0**	**657**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
JM0001 JOINT BIO AGENT IDENTIFICATION AND DIAGNOSTIC SYS (JBAIDS)	12504	5710	4934	483	0	0	0	0	0	23631
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	45809	38917	48627	47134	54847	54639	60495	61031	Cont	Cont
JX0210 CRITICAL REAGENTS PROGRAM (CRP)	2192	2297	2430	0	0	0	0	0	0	6919

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

D. Acquisition Strategy:

CRP

The Critical Reagents Program (CRP) is executing a strategy that establishes a core R&D capability to develop reference materials (antigens, nucleic acids, and antibodies) and new detection and diagnostic assays for biothreat agent detection that can be horizontally inserted across multiple platforms. In addition, this strategy will implement a formal advanced development process to transition new assays into production and integration with the appropriate detection/diagnostic platform.

JBAIDS

JBAIDS is an evolutionary development program. Increment 1 will be a rapid development and fielding effort to deliver a critical capability to identify bacteria 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. Process controls will be developed and tested during FY07 as a product enhancement. The JBAIDS FOT&E for shipboard applications will be executed in 3QFY07.

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 thru FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. Other serotypes will be developed thru an evolutionary approach, as funding becomes available.

The management lead for the program shifted to JVAP at MS A. The technology development stage includes the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine is evaluated for safety and immunogenicity in a small human trial (Phase 1).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

During the System Development and Demonstration phase (SDD), 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 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 "Animal Rule." The Milestone C, also the Low Rate Initial Production (LRIP) decision, will be conducted after the manufacturing process has been validated, consistency lots have been produced, and interim safety data is available from the Phase 3 clinical trial. 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 ENC

The management lead for the program shifted to CBMS at MS A. The technology development stage includes the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine is evaluated for safety and immunogenicity in a small human trial.

VAC PLG

The current budget supports development thru FDA licensure of a plague vaccine.

Chemical Biological Medical Systems (CBMS) is mitigating technical program risk in the Plague Vaccine Program by temporarily supporting development of both a US vaccine candidate and a United Kingdom (UK) vaccine candidate. The US candidate is managed by JVAP's prime systems contractor and the UK candidate is managed thru a Project Arrangement (PA) with Canada and the UK. Both vaccines will be developed thru an event-driven down-select decision which is after a Phase 2-like clinical trial (Phase 1b for the UK - funded thru a contract with the National Institute of Allergy and Infectious Diseases (NIAID) - and Phase 2a for the US). The information from this trial and other supporting non-clinical information will be used to determine if the vaccines can meet the Capabilities Development Document (CDD) threshold duration of protective immunity - one year after completion of primary series. Following down-select in 2008, the US will fund a single plague vaccine candidate thru FDA licensure. The dates listed in the "SCHEDULE" are primarily for the US candidate, as only the manufacturing scale up and validation efforts for the UK candidate have been funded thru the Project Arrangement.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

The management lead for the program shifted to JVAP at MS A. The technology development stage 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 System Development and Demonstration phase (SDD), 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, consistency lots have been produced, and interim safety data is available from the Phase 3 clinical trial. 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.

VACCINES

Anthrax Vaccine Absorbed (AVA) and Vaccinia Immune Globulin (VIG) are procured as Commercial off-the-shelf (COTS) products directly from the manufacturer. Smallpox is currently procured thru an Interagency Agreement (IAA) with the Centers for Disease Control (CDC).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
CRP - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	USAMRIID, Fort Detrick, MD & Dugway Proving Ground, DPG, UT	U	5385	535	2Q FY07	1500	2Q FY08	1000	2Q FY09	0	8420	0
CRP - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Naval Medical Research Center, Silver Spring, MD	U	1412	205	2Q FY07	350	2Q FY08	300	2Q FY09	0	2267	0
JBAIDS													
SW SB - JBAIDS Block I - Assay and Kit Prototype Development	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	13207	1011	2Q FY07	0	NONE	0	NONE	0	14218	0
HW S - JBAIDS Block I - Congressional Interest Item	C/FPI	TBD	C	0	1337	4Q FY07	0	NONE	0	NONE	0	1337	0
VAC BOT													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-Up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	5640	2Q FY07	7501	2Q FY08	9402	2Q FY09	0	22543	0
VAC PLG													
HW S - Includes validation and consistency lot production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	11123	16216	1Q FY07	16022	1Q FY08	13335	1Q FY09	0	56696	0
VACCINES													
TT Bio - ParalellaVax Rapid Vaccine Testing	SS/CPFF	Maxygen, Inc. Redwood City, CA	C	0	1634	4Q FY07	0	NONE	0	NONE	0	1634	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal I. Product Development:					26578		25373		24037		0	107115	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
CRP - Conformance Testing and Select Biological Threat Agent Reference Material Development	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	1452	520	2Q FY07	650	2Q FY08	467	2Q FY09	0	3089	0
CRP - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground, Dugway, UT	U	623	250	2Q FY07	275	2Q FY08	138	2Q FY09	0	1286	0
JBAIDS													
TD/D SB - JBAIDS Block I - Joint Services Training	MIPR	AMEDD, Fort Sam Houston, TX	U	1095	10	2Q FY07	0	NONE	0	NONE	0	1105	0
TD/D SB - JBAIDS Block I - Government Labs Support	MIPR	AFIOH, AFIP, NSWC, and DPG	U	2339	240	2Q FY07	0	NONE	0	NONE	0	2579	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
TD/D S - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	2788	2Q FY07	2813	2Q FY08	3624	2Q FY09	0	9225	0
VAC PLG													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	4670	6081	1Q FY07	6008	1Q FY08	5140	1Q FY09	0	21899	0
Subtotal II. Support Costs:					9889		9746		9369		0	39183	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
CRP - Conformance Testing of Select Biological Threat Agent Reference Materials and Assays	MIPR	Naval Medical Research Center, Silver Spring, MD	U	1513	346	1Q FY07	705	2Q FY08	600	2Q FY09	0	3164	0
CRP - Test & Evaluation of Select Biological Threat Agent Reference Materials and Assays	MIPR	USAMRIID, Frederick, MD	U	721	116	2Q FY07	705	2Q FY08	546	2Q FY09	0	2088	0
CRP - Validation Program	Reqn	FDA/AOAC International, Gaithersburg, MD	U	1017	900	2Q FY07	5103	2Q FY08	4000	2Q FY09	0	11020	0
JBAIDS													
OTHT SB - JBAIDS Block I - Conduct DT, FOT&E	MIPR	AMEDDC&S, Brooks City-Base, TX; Norfolk, VA	U	2295	115	3Q FY07	0	NONE	0	NONE	0	2410	0
DTE SB - JBAIDS Block I - Conduct OA & OT	MIPR	AFOTEC, Kirtland AFB, NM	U	2995	800	1Q FY07	0	NONE	0	NONE	0	3795	0
DTE SB - JBAIDS Block I - Assay and Protocol Testing	MIPR	Dugway Proving Ground, UT	U	1236	25	3Q FY07	0	NONE	0	NONE	0	1261	0
DTE SB - JBAIDS Block I - DT, Limited User Testing	MIPR	TBD (Various)	U	0	100	3Q FY07	0	NONE	0	NONE	0	100	0
VAC BOT													
OTHT S - Testing, evaluation and clinical trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	7063	2Q FY07	5626	2Q FY08	3624	2Q FY09	0	16313	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC PLG													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	9340	11619	1Q FY07	12016	1Q FY08	10280	1Q FY09	0	43255	0
Subtotal III. Test and Evaluation:					21084		24155		19050		0	83406	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
PM/MS S - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	769	193	1Q FY07	434	1Q FY08	325	1Q FY09	0	1721	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	548	96	4Q FY07	306	4Q FY08	127	4Q FY09	0	1077	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	327	0	NONE	204	4Q FY08	101	4Q FY09	0	632	0
JBAIDS													
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	586	468	4Q FY07	0	NONE	0	NONE	0	1054	0
PM/MS S - Program Management Support	C/FFP	Goldbelt Raven, LLC, Frederick, MD	C	582	164	1Q FY07	0	NONE	0	NONE	0	746	0
VAC BOT													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	372	4Q FY07	422	4Q FY08	1087	4Q FY09	0	1881	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Frederick, MD	U	0	558	4Q FY07	563	4Q FY08	1450	4Q FY09	0	2571	0
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	608	1Q FY07	563	1Q FY08	1450	1Q FY09	0	2621	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1301	1Q FY07	1265	1Q FY08	3261	1Q FY09	0	5827	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	705	1216	4Q FY07	901	4Q FY08	770	4Q FY09	0	3592	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Frederick, MD	U	940	912	4Q FY07	1201	4Q FY08	1028	4Q FY09	0	4081	0
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	940	2350	1Q FY07	1201	1Q FY08	1028	1Q FY09	0	5519	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2115	912	1Q FY07	2705	1Q FY08	2313	1Q FY09	0	8045	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	657	NONE	0	NONE	0	NONE	0	657	0
Subtotal IV. Management Services:					9807		9765		12940		0	40024	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

TOTAL PROJECT COST:		67358		69039		65396		0	269728	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

D. Schedule Profile:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
CRP								
CRP - Expand Select Biological Threat Agent Reference Materials	>>							2Q
CRP - Development of ECL Immunoassays & PCR Genomic Assays	>>							2Q
CRP - Development and Implementation of ISO Guidelines, Validation Program, and Systems Engineering/Lean Six Sigma	4Q							2Q
CRP - ISO 17025 Guidelines into Select Biological Threat Agent Reference Materials		2Q		3Q				
JBAIDS								
JBAIDS Inc 1 - DT, Limited User Testing & Follow-On Test and Evaluation of Qiagen Flow Kit and process controls	2Q	4Q						
VAC BOT								
Non-Clinical Testing	>>					4Q		
Process Validation - Large Scale	>>			2Q				
Phase 1 Clinical Trial (A/B)	>>			2Q				

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

D. Schedule Profile (cont):

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
VAC BOT (Cont)								
Milestone B			3Q					
Consistency Lot Production			3Q —	—	— 4Q			
Phase 2 Clinical Trial (A/B)			4Q —	—	—	— 2Q		
Phase 3 Clinical Trial (A/B)					3Q —	—	— 3Q	
Milestone C						4Q		
Biological Licensure Application							4Q	
FDA Licensure (A/B)/IOC								4Q
VAC PLG								
Non-Clinical Studies (US Candidate)	>> —	—	—	— 3Q				
Phase 1 Clinical Trial (US Candidate)	>> —	— 2Q						
Process Development - Large Scale (US Candidate)	>> —	— 3Q						
Manufacturing Scale Up/Process Validation (UK Candidate)	2Q —	— 4Q						
Milestone B (US Candidate)	3Q							
Phase 2 Clinical Trial (US Candidate)	3Q —	—	—	2Q				
Process Validation - Large Scale (US Candidate)		1Q —	— 3Q					

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
VAC PLG (Cont)																																
Down-select to single candidate											3Q																					
Consistency Lot Production (US Candidate)											3Q	—	—	2Q																		
Phase 3 Clinical Trial													1Q	—	—	—	—	—	—	4Q												
Milestone C																4Q																
Biological Licensure Application (BLA) Submission																					1Q											
FDA Licensure/IOC																								4Q								

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MC5	MEDICAL CHEMICAL DEFENSE (SDD)	2406	6391	21348	26106	16306	18897	17740	12173	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MC5 MEDICAL CHEMICAL DEFENSE (SDD): This project funds 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 System Development and Demonstration (SDD) phase of the acquisition strategy for prophylactic and therapeutic drugs, diagnostic equipment, and other life support equipment for protection against and management of chemical warfare agents. 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) Pharmaceutical Post Approval and Development Support (PPADS) - Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP) used as a pretreatment against nerve agent poisoning and Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), used as a topical skin protectant; (2) Advanced Anticonvulsant System (AAS), which will be used as a treatment for seizures from exposure to nerve agents; (3) Improved Nerve Agent Treatment System (INATS), which will be used as a treatment for nerve agent intoxication to include new indications for Pyridostigmine Bromide (BP) that will be integrated with current therapeutic regimens; and (4) Bioscavenger Increment 2 (BSCAV Increment 2), which will be used as a prophylaxis against nerve agents.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
ADVANCED ANTICONVULSANT SYSTEM	0	6329	11269	10746
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
AAS - FY 07/08/09 - Continue process development and current Good Manufacturing Practices (cGMP) requirements.	0	3033	3071	2763
AAS - FY 07 - Achieve Milestone B. Initiate Phase 2 clinical safety studies. FY 08/09 - Continue Phase 2 clinical safety studies.	0	2000	6246	6252
AAS - FY 07/08/09 - Initiate and complete Good Laboratory Practices (GLP) animal efficacy studies.	0	726	917	467
AAS - FY 07/08/09 - Initiate and complete formulation toxicology and stability studies.	0	570	746	201
AAS - FY 08/09 - Initiate and continue Developmental Testing/Operational Testing (DT/OT) of packaging.	0	0	289	193
AAS - FY 09 - Initiate New Drug Application (NDA).	0	0	0	870
Total	**0**	**6329**	**11269**	**10746**

	FY 2006	FY 2007	FY 2008	FY 2009
BIOSCAVENGER	0	0	0	4898
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
BSCAV Increment 2 - FY 09 - Continue large scale manufacturing, process qualification, and validation. Achieve Milestone B.	0	0	0	2709
BSCAV Increment 2 - FY 09 - Initiate Phase 2 clinical safety studies.	0	0	0	1366
BSCAV Increment 2 - FY 09 - Initiate GLP animal efficacy studies.	0	0	0	823
Total	**0**	**0**	**0**	**4898**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

	FY 2006	FY 2007	FY 2008	FY 2009
IMPROVED NERVE AGENT TREATMENT SYSTEM	0	0	10079	10462
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
INATS - FY 08 - Complete GLP pre-clinical safety studies.	0	0	628	0
INATS - FY 08 - Complete and submit Investigational New Drug (IND) application.	0	0	255	0
INATS - FY 08 - Initiate and complete formulation, compatibility, and stability studies with autoinjector.	0	0	3330	0
INATS - FY 08 - Continue Phase 1 clinical safety studies. FY 09 - Complete Phase 1 clinical safety studies and achieve Milestone B.	0	0	673	376
INATS - FY 08/09 - Continue process development and cGMP manufacturing requirements.	0	0	5193	4581
INATS - FY 09 - Initiate Phase 2 clinical safety studies.	0	0	0	4090
INATS - FY 09 - Initiate GLP definitive animal efficacy studies.	0	0	0	1415
Total	**0**	**0**	**10079**	**10462**

	FY 2006	FY 2007	FY 2008	FY 2009
PHARMACEUTICAL POST APPROVAL & DEVELOPMENT SUPPORT	2406	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SNAPP - FY 06 - Completed FDA required post-approval studies.	1633	0	0	0
SERPACWA - FY 06 - Completed FDA required post-marketing studies (including compatibility study with M291).	773	0	0	0
Total	**2406**	**0**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	62	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	62	0	0
Total	**0**	**62**	**0**	**0**

C. Other Program Funding Summary: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

D. Acquisition Strategy:

AAS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office and/or a commercial partner will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the system integrator to ensure that products are manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines, appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted, and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

BSCAV

Bioscavenger is a developmental program with three distinct increments. Increment 1 is based on butyrylcholinesterase purified from human plasma, i.e., plasma-derived Bioscavenger or pBioscavenger. Medical Identification and Treatment Systems (MITS) Joint Product Management Office exercises management oversight and a commercial partner serves as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. The Department of Health and Human Services (DHHS) may consider transition of this product for further development using BioShield funds after the Phase 1 clinical study is completed.

Bioscavenger Increment 2 will initially look at two different technologies that bind and sequester nerve agents. The down-selection to one of the technologies will occur following the Phase 1 human clinical safety study. MITS Joint Product Management Office exercises management oversight and commercial partners to serve as system integrators for their respective candidate products during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. Contracts have been awarded for both technologies, and there will be a down-selection to one Bioscavenger product at Milestone B. The plasma-derived Bioscavenger will be considered in the down selection. After Milestone B, during the System Development and Demonstration Phase, MITS will continue to exercise management oversight and the selected commercial partner will serve as the system integrator to ensure that: the selected product is manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines; appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted; and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained, and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

Bioscavenger Increment 3 will be based on a product that degrades nerve agents while retaining its own activity.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

INATS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office and/or a commercial partner will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the system integrator to ensure that products are manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines, appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted, and required toxicology studies are performed. During the Production and Deployment Phase, FDA approval will have been obtained and full rate and stockpile production will be pursued. Any FDA mandated post-marketing surveillance will be conducted.

PPADS

Medical Identification and Treatment Systems (MITS) Joint Product Management Office and/or a commercial partner will serve as the system integrator during the Production and Deployment Phase. FDA approval will be obtained and full rate and stockpile production will be pursued. Large-scale production and packaging issues will be addressed along with any FDA mandated post-marketing testing and surveillance.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - cGMP Manufacturing Requirements	C/CPIF	TBD	C	0	2567	2Q FY07	4470	2Q FY08	4311	2Q FY09	0	11348	0
BSCAV													
BSCV II - cGMP Manufacturing	C/CPIF	TBD	C	0	0	NONE	0	NONE	1959	1Q FY09	0	1959	0
INATS													
INATS - cGMP Manufacturing	C/CPIF	TBD	C	0	0	NONE	4032	2Q FY08	4184	2Q FY09	0	8216	0
Subtotal I. Product Development:					2567		8502		10454		0	21523	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - Regulatory Integration and NDA Support Efforts	C/CPIF	TBD	C	0	885	2Q FY07	1699	2Q FY08	1638	2Q FY09	0	4222	0
BSCAV													
BSCV II - Regulatory Integration and NDA Support Efforts	C/CPIF	TBD	C	0	0	NONE	0	NONE	734	2Q FY09	0	734	0
INATS													
INATS - Regulatory Integration and NDA Support Efforts	C/CPIF	TBD	C	0	0	NONE	243	2Q FY08	769	2Q FY09	0	1012	0
Subtotal II. Support Costs:					885		1942		3141		0	5968	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - GLP Animal Efficacy Studies	MIPR	TBD	U	0	324	2Q FY07	510	2Q FY08	491	2Q FY09	0	1325	0
AAS - Phase 2 Clinical Safety Study	C/CPIF	TBD	C	0	1342	2Q FY07	2379	2Q FY08	2176	2Q FY09	0	5897	0
AAS - New Formulation Toxicology and Stability Studies	C/CPIF	TBD	C	0	327	2Q FY07	510	2Q FY08	492	2Q FY09	0	1329	0
BSCAV													
BSCV II - Phase 2 Clinical Safety and GLP Animal Efficacy Studies	C/CPIF	TBD	C	0	0	NONE	0	NONE	1469	1Q FY09	0	1469	0
INATS													
INATS - GLP Pre-clinical and Phase 1 Studies	MIPR	USAMRAA, USAMRICD, CBIAC, Fort Detrick, MD	U	0	0	NONE	1276	2Q FY08	336	2Q FY09	0	1612	0
INATS - Formulation, Compatibility, Stability Studies with Autoinjector	C/CPIF	TBD	C	0	0	NONE	2987	1Q FY08	0	NONE	0	2987	0
INATS - GLP Animal Efficacy & Phase 2 Clinical Safety Studies	C/CPIF	TBD	C	0	0	NONE	0	NONE	3550	2Q FY09	0	3550	0
Subtotal III. Test and Evaluation:					1993		7662		8514		0	18169	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	563	1Q FY07	568	1Q FY08	546	1Q FY09	0	1677	0
AAS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	567	4Q FY08	546	4Q FY09	0	1113	0
AAS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	321	4Q FY07	566	4Q FY08	546	4Q FY09	0	1433	0
BSCAV													
BSCV II - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	0	NONE	146	4Q FY09	0	146	0
BSCV II - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	0	NONE	97	4Q FY09	0	97	0
BSCV II - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	0	NONE	493	1Q FY09	0	493	0
INATS													
INATS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	504	4Q FY08	523	4Q FY09	0	1027	0
INATS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	507	4Q FY08	507	4Q FY09	0	1014	0
INATS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	530	1Q FY08	593	1Q FY09	0	1123	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	62	NONE	0	NONE	0	NONE	0	62	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:					946		3242		3997		0	8185	

Remarks:

TOTAL PROJECT COST:					6391		21348		26106		0	53845	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
AAS																																
AAS - cGMP Manufacturing Requirements	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1Q											
AAS - Milestone B						2Q																										
AAS - Formulation Toxicology & Stability Studies						2Q	—	—	—	—	—	—	—	2Q																		
AAS - Phase 2 Clinical Safety Studies						2Q	—	—	—	—	—	—	—	—	—	—	1Q															
AAS - GLP Animal Efficacy Studies						2Q	—	—	—	—	—	—	—	—	—	4Q																
AAS - DT/OT for Packaging												4Q	—	—	—	—	1Q															
AAS - New Drug Application (NDA) Submission															3Q	—	—	—	3Q													
AAS - MS C																								4Q								
BSCAV																																
BSCAV Inc. 2 - Large Scale Manufacturing, Process Qualification & Validation									1Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q				
BSCAV Inc. 2 - Milestone B														2Q																		
BSCAV Inc. 2 - Conduct GLP Animal Efficacy Studies																4Q	—	—	—	—	—	—	—	4Q								

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

D. Schedule Profile (cont):

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
BSCAV (Cont)								
BSCAV Inc. 2 - Conduct Phase 2 Clinical Safety Studies				4Q			1Q	
BSCAV Inc. 2 - NDA Submittal							3Q	
BSCAV Inc. 2 - Milestone C								4Q
INATS								
INATS - GLP Pre-Clinical Safety Studies	>>		2Q					
INATS - Process Development and cGMP Manufacturing Requirements	>>						2Q	
INATS - Phase 1 Clinical Safety Studies	>>			2Q				
INATS - IND Application	>>		4Q					
INATS - Formulation, compatibility, stability studies with autoinjector			1Q 4Q					
INATS - Milestone B				2Q				
INATS - Phase 2 Clinical Safety Studies				3Q			1Q	
INATS - GLP Animal Efficacy Studies				3Q			1Q	
INATS - NDA Preparation and Submittal						2Q	2Q	
INATS - Milestone C								3Q

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MC5

D. Schedule Profile (cont): PPADS	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
SNAPP - FDA Required Post-Marketing Studies	>> 4Q							
SERPACWA - FDA Required Post-Marketing Studies	>> 4Q							

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MR5	MEDICAL RADIOLOGICAL DEFENSE	0	0	0	7867	8515	9460	5083	2404	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MR5 MEDICAL RADIOLOGICAL DEFENSE: This project funds the advanced development of candidate therapeutic and/or prophylactic medical countermeasures to mitigate the consequences of exposure to ionizing radiation due to nuclear or radiological attacks. Exposure to ionizing radiation causes damage to the blood-forming cells (hematopoietic system) and gastrointestinal system, leading to Acute Radiation Syndrome (ARS). Development and fielding of prophylactic and therapeutic drugs requires Food and Drug Administration (FDA) approval. 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. This project allows the joint force to operate safely, over the long term, and at near normal levels of effectiveness while in a contaminated environment.

Medical Radiation Countermeasures (MRADC) efforts include multiple countermeasures required to restore casualties to pre-exposure health to protect U. S. Forces against injury caused by exposure to radiation. MRADC shall reverse or limit radiation injury, resulting in increase 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 in the battle space, including during evacuation.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
MEDICAL RADIOLOGICAL COUNTERMEASURES	0	0	0	7867
RDT&E Articles (Quantity)	0	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
MRADC - FY 09 - Initiate Phase 2 clinical safety studies.	0	0	0	3564
MRADC - FY 09 - Initiate large scale manufacturing.	0	0	0	4303
Total	**0**	**0**	**0**	**7867**

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

MRADC

Medical Identification and Treatment Systems (MITS) Joint Product Management Office will manage the development of Medical Radiation Countermeasures (MRADC) for the DoD. A contractor will serve as the product integrator throughout development, and 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. The Technology Development Phase includes pre-clinical studies and Phase 1 human clinical safety studies. During the System Development and Demonstration (SDD) Phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the SDD phase. During Production and Deployment Phase, sufficient quantities of product to meet Initial Operating Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance requested by the FDA will be conducted. MRADC will be developed using a system-of-systems approach to address the multiple organ systems affected by radiation exposure. Individual countermeasure solutions will be developed using a single step to full capability (FDA approval). The DoD MRADC program shall be non-duplicative of and synergistic with similar efforts by the Department of Health and Human Services (DHHS).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - cGMP Manufacturing	C/CPIF	TBD	C	0	0	NONE	0	NONE	3284	2Q FY09	0	3284	0
Subtotal I. Product Development:					0		0		3284		0	3284	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Regulatory Integration and NDA Support Efforts	C/CPIF	TBD	C	0	0	NONE	0	NONE	1180	2Q FY09	0	1180	0
Subtotal II. Support Costs:					0		0		1180		0	1180	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Phase 2 Clinical Safety Studies	C/CPIF	TBD	C	0	0	NONE	0	NONE	2360	2Q FY09	0	2360	0
Subtotal III. Test and Evaluation:					0		0		2360		0	2360	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	0	NONE	423	1Q FY09	0	423	0
MRADC - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	0	NONE	393	4Q FY09	0	393	0
MRADC - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	0	NONE	227	4Q FY09	0	227	0
Subtotal IV. Management Services:					0		0		1043		0	1043	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

TOTAL PROJECT COST:		0		0		7867		0	7867	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MR5

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
MRADC																																
MRADC - Milestone B																4Q																
MRADC - Phase 2 Clinical Safety Studies																4Q								4Q								
MRADC - Large Scale Manufacturing																4Q									1Q							
MRADC - Definitive Animal Efficacy Studies																					1Q							4Q				
MRADC - NDA Submission																										2Q						
MRADC - FDA Approval																												4Q				
MRADC - Milestone C																													1Q			

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TE5	TEST & EVALUATION (SDD)	18892	22163	45604	42481	37603	15485	15008	4844	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TE5 TEST & EVALUATION (SDD): This funding supports the Product Director Test Equipment, Strategy, and Support (PD TESS) effort. PD TESS provides support for the Milestone Decision Authority, Joint Project Managers, and the Test and Evaluation (T&E) community with the development of test capabilities to adequately test and evaluate Chemical, Biological, Radiological, and Nuclear Defense systems throughout the life cycle acquisition process.

Efforts funded under PD TESS support the following five major areas: (1) Sense Laboratory (Chemical), (2) Sense Laboratory (Biological), (3) Sense Field, (4) Shield and Sustain, and (5) Shape.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

(1) Sense Laboratory (Chemical): The Sense (Chem) development effort provides a new capability to the Edgewood Chemical Biological Center (ECBC) to conduct tests involving new and emerging highly toxic threat materials. The test capability will support tests of various commodity areas (such as decontamination, collective protection and individual protection, and contamination avoidance (detection) technologies and systems for the Department of Defense and other government agencies. The Acquisition Programs supported by this effort will be the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA); the Joint NBC Reconnaissance System (JNBCRS) Sensors; the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker Sensors; the Joint Service General Purpose Mask (JSGPM); the Joint Service Lightweight Integrated Suit Technology (JSLIST); the Joint Expeditionary Collective Protection (JECP); the Joint Collective Protection Equipment (JCPE); the Joint Service Tactical Decontamination System (JSTDS); the Joint Service Sensitive Equipment Decontamination (JSSED); the Joint Warning and Reporting Network (JWARN) hardware components; the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Protective Air Crew Ensemble (JPACE); the JSLIST Combat Vehicle Crewman Coverall (JC3); Multipurpose Lightweight Overboot (MULO); the Advanced Footwear Solution (AFS); the Initial Footwear Solution (IFS); the JSLIST Block I Glove Upgrade (JB1GU); the JSLIST Block II Glove Upgrade (JB2GU); the Chemical & Biological Protective Shelter (CBPS); the Collective Protection System (CPS); the Joint Service Aircrew Mask (JSAM); the Joint Service Chemical Environment Survivability Mask (JSCESM); the Joint Chemical Ensemble (JCE); and the All Purpose - Personal Protective Equipment (AP-PPE).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

(2) Sense Laboratory (Biological): The Sense (Bio) development effort supports current and future biological point detection system programs; develops a single unit of measure for characterizing biological aerosols in testing; designs and fabricates a live agent Biological Standoff facility; and develops a biological spectral instrument which measure spectral signatures and cross sections of biological warfare agents and stimulant materials. The Acquisition Programs supported by this effort will be the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Point Detection System (JBPDS) / JBPDS Block II; the Joint Biological Tactical Detection System (JBTDS); the Joint Biological Standoff Detection System (JBSDS); the Joint NBC Reconnaissance System (JNBCRS); and the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker.

(3) Sense Field: The Sense Field capability provides the Test Grid and Data Network, a fully instrumental CB stimulant field test capability to include cloud tracking, Test Data Network, C4ISR network, and safari capability; a Spectroradiometer effort which procures two Adaptive Infrared Imaging Spectroradiometers - Wide Area Detector (AIRIS-WAD) to complement a Joint Science and Technology Office effort; and the Joint Ambient Breeze Tunnel and Active Standoff Chamber (JABT/ASC) upgrade which provides test instrumentation and fully characterizes and validates JABT/ASC chamber performance. The Acquisition Programs supported by this effort will be the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA) Variants; the Joint NBC Reconnaissance System (JNBCRS); the Joint Warning and Reporting Network (JWARN); the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Standoff Detection System (JBSDS); the Joint Biological Point Detection System (JBPDS); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker; the Joint Effort Model (JEM); the Joint Operational Effects Federation (JOEF); and the Joint Expeditionary Collective Protection (JECP).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

(4) Shield and Sustain: The Shield and Sustain capability provides the Upgraded Decontamination Facility (UDF), an enhanced ability to conduct decontamination efficacy testing thru the use of a test apparatus that includes separate containment chambers to support small-scale contamination, decontamination, and off-gassing/residual agent collection test procedures; the Protection Ensemble Test Mannequin (PETMAN) program which designs and procures articulated robotic mannequins that simulate soldier activity to allow for full system evaluation of individual protection ensembles against chemical warfare agents and non-traditional agents; the Man-in-Simulant Test (MIST) Upgrade program which includes two improved test capability development efforts. The first is the development of a real-time simulant sampling system and associated test methodology. The second is the development of test equipment and methodology that allows for simultaneous particulate quantification of various particle sizes to support aerosol (stimulant) level tests; the Liquid Chromatograph and Gas Chromatograph (LC/GC) effort, procures analytical testing equipment for low-level detection of CW agents in support of decontamination programs. This test capability will provide improved characterization of residual contamination to support evaluation of decontamination efficacy of decontamination systems; the Individual Protection Ensemble (IPE) Grid program develops methodology for assigning locations to the body and each successive layer of IPE to provide a commonality of measurements for IPE performance assessment. A common sample location identification system is needed to equate data collected by various test protocols, to provide a means to ensure data is collected from the same location for each testing cycle at each testing location, and to joint data from several testing scenarios; the Collective Protection Airflow Mapping (CPAFM) program develops capabilities to measure, map, and model the airflow, barometric pressure and agent flux of the Collective Protection (ColPro) systems, both internally and externally, as a function of time. The program provides enhanced test and evaluation tools to allow fielding of significantly more effective ColPro systems for the warfighter. The enhancement will be achieved by using airflow mapping capabilities to identify ColPro design problems that reduce protection factors and allow contamination to enter the protected area; and the ColPro Facility Upgrade effort provides improved test fixtures and instrumentation to evaluate ColPro systems and components to include air purification systems and novel closures. Standardized test procedures will be developed to allow for comparison of test data across facilities. The Acquisition Programs supported by this effort will be the Joint Sensitive Equipment Decontamination (JSSED); the Joint Platform Interior Decontamination (JPID); the Joint Expeditionary Collective Protection (JECP); the Joint Collective Protection Equipment (JCPE); the Chemical & Biological Protective Shelter (CBPS); the Collective Protection System (CPS); the Joint Service Lightweight Integrated Suit Technology (JSLIST); the Joint Protective Air Crew Ensemble (JPACE); the JSLIST Combat Vehicle Crewman Coverall (JC3); the Multipurpose Lightweight Overboot (MULO); the Advanced Footwear Solution (AFS); the Initial Footwear Solution (IFS); the JSLIST Block I Glove Upgrade (JB1GU); the JSLIST Block II Glove Upgrade (JB2GU); the Joint Service General Purpose Mask (JSGPM); the Joint Service Aircrew Mask (JSAM); the Joint Service Chemical Environment Survivability Mask (JSCESM); the Joint Chemical Ensemble (JCE); and the All Purpose - Personal Protective Equipment (AP-PPE).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

(5) Shape: The Shape capability provides the Synthetic Test Environment effort which produces a library of real world environmental and interferent physical characteristics for CB systems by collecting background and interferent signatures at operationally relevant locations throughout the world. The signatures will be integrated into models to generate synthetic environments to assess material performance under various conditions; and the Stimulants and Stimulators effort to design and build detection system stimulants and stimulators to facilitate hardware-in-the-loop testing in a field environment. The stimulants and stimulators will be networked on the Dugway Proving Ground test grid and will allow an operator to cause any combination of detection systems to enter an alarm state by exercising the technology in the detection system. The stimulants and stimulators will allow the detection systems to be exercised without the release of simulants into the test area. The Acquisition Programs supported by this effort will be the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); the Joint Chemical Agent Detector (JCAD); the Automatic Chemical Agent Detector Alarm (ACADA) Variants; the Joint NBC Reconnaissance System (JNBCRS); the Joint Warning and Reporting Network (JWARN); the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM); the Joint Biological Standoff Detection System (JBSDS); the Joint Biological Point Detection System (JBPDS); the Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) Stryker; the Joint Effects Model (JEM); the Improved Point Detection System (IPDS); the Improved Chemical Agent Monitor (ICAM); and the Multiservice Radiac Program (AN/PDR-75, AN/UDR-2, AN/PDR-77, AN/UDR-13).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
TEST EQUIPMENT, STRATEGY & SUPPORT	18892	21954	45604	42481
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
PD TESS - IPE Mannequin - FY 08 - Initiate design of Protection Ensemble Test Mannequin (PETMAN) system construction, verification testing, installation and validation testing of systems. FY 09 - Complete installation and testing of systems.	0	0	4000	3000

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
PD TESS - Chemical Biological Agent Resistance Test (CBART) System - FY 06 - Initiated design of new material swatch test system to test novel filtration material technologies in an effort to mimic real life field conditions. FY 07 - Complete fixture design and initiate verification testing and methodology prove out. FY 08 - Complete verification testing, initiate final reporting/methodology documentation of CBART fixture design. FY 09 - Fabricate, install and verify CBART systems at DPG.	420	372	600	1500
PD TESS - Man-in-Simulant Test (MIST) Upgrade - FY 06 - Acquired sampling hardware and aerosol measurement equipment to support verification of a real-time MIST sampling system and associated test methodology. FY 07 - Acquire real-time MIST sensors to support testing. FY 08 - Conduct verification/validation testing.	500	418	100	0
PD TESS - Upgrade ColPro Facilities - FY 06 - Acquired instrumentation/initiated design and upgrade of collective protection (ColPro) test facilities at DPG, UT, Naval Surface Warfare Center, Dahlgren, VA, Eglin AFB, FL and Edgewood Chemical Biological Center (ECBC), APG, MD.	3000	0	0	0
PD TESS - Upgrade DPG ASC/JABT - FY 06 - Developed test plans to characterize and validate the Joint Ambient Breeze Tunnel (JABT) and Active Standoff Chamber (ASC). Purchased and installed ASC/JABT referee instrumentation/equipment. Performed modeling studies for ASC/JABT chemical and biological simulant characterization. Conducted chemical and biological simulant characterization and validation tests in the JABT and initiated chemical and biological simulant characterization and validation tests in the ASC. FY 07 - Complete simulant characterization testing and validation testing in the JABT/ASC.	2000	465	0	0
PD TESS - Test Grid Instrument Network & Design - FY 06 - Built and installed a cloud characterization data network. Initiated comprehensive test grid and data network design (Funds located on CA5 JSLSCAD line). FY 07 - Complete design of test grid instrumentation, data network, C4ISR and Safari capability. FY 08 - Purchase necessary referee instrumentation and data management hardware and initiate data fusion software development. FY 09 - Complete software development and integrate into test grid command center. Purchase/integrate data visualization hardware into test grid command center.	0	4274	13144	10772

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
PD TESS - Whole System Live Agent Test (WSLAT) - FY 06 - Validated LRU improvements. Completed modeling and simulation development of Joint Biological Point Detection System (JBPDS) engineering models supporting WSLAT. Completed methodology development/testing. Completed preliminary chamber design. FY 07 - Conduct WSLAT record test in support of JBPDS. Initiate and complete final WSLAT chamber design. FY 08 - Complete WSLAT evaluation. Initiate fabrication of WSLAT chamber. FY 09 - Complete fabrication of WSLAT chamber.	6617	4460	10000	18566
PD TESS - Biospectral Instrument - FY 06 - Prepared engineering design, initiated and completed software development and integration, fabrication and electronics assembly, and testing/of spectral characterization instrument to measure the relative UV, laser-induced fluorescence signatures and cross-sections, and the UV and infrared elastic backscatter cross-sections of biological simulant and agent materials.	1380	0	0	0
PD TESS - DPG Chemistry Laboratory Upgrade - FY 06 - Developed design and upgraded test chambers/fixtures for chemistry laboratory.	3475	0	0	0
PD TESS - Dynamic Test Chamber (DTC) - FY 06 - Initiated design of chemical agent point detector chamber, that allows the chamber environment, including challenge materials, to be varied to simulate real-world conditions. FY 07 - Complete DTC design. FY 08 - Fabricate and initiate installation of DTC. Develop system performance validation test plan and operating procedures. FY 09 - Complete installation of the DTC. Conduct performance validation test.	500	2323	7000	3000
PD TESS - Stimulants and Stimulator System - FY 07 - Complete stimulant devices design and stimulator system design. FY 08 - Fabricate stimulant devices/stimulator system. Initiate verification/validation testing. FY 09 - Complete fabrication of stimulant devices/stimulator system. Complete verification/validation testing.	0	929	4500	2100
PD TESS - Backgrounds and Interferents - FY 06 - Developed a signature/interferent collection plan and a data/metadata management plan to guide worldwide collection of backgrounds and interferents for CBD detection programs. FY 07 - Initiate collection of background/interferent signatures. FY 08 - Complete background/interferent signature collection and integrate into signature database.	1000	2880	3500	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
PD TESS - FY 07/08/09 - Provide systems engineering support to integrate and execute System Development and Demonstration T&E capability development efforts.	0	5833	2760	3543
Total	**18892**	**21954**	**45604**	**42481**

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
SBIR/STTR	0	209	0	0
RDT&E Articles (Quantity)	0	0	0	0

Accomplishments/Planned Program	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SBIR - FY 07 - Small Business Innovative Research.	0	209	0	0
Total	**0**	**209**	**0**	**0**

C. Other Program Funding Summary:

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**To Compl**	**Total Cost**
TE7 TEST & EVALUATION (OP SYS DEV)	0	0	7016	7201	6922	8094	8235	8235	Cont	Cont

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

D. Acquisition Strategy:

PD TESS

The PD TESS program provides for the development and acquisition of new and enhanced test capabilities to support the sense, shield, shape, and sustain mission areas for the Joint Service Chemical and Biological Defense Program (CBDP). Beginning in FY06 and continuing thru the FYDP, a combination of Advanced Component Development and Prototypes (ACD&P) and System Development and Demonstration (SDD) efforts will be executed. The efforts are being supported thru new, competitive contract actions, by studies conducted by the National Academies of Science, and thru efforts conducted by technology experts of other Government agencies and academia. Technology solutions will leverage commercially available technologies and systems to provide state-of-the-art capabilities that address the current and future test and evaluation needs of the CBDP. Delivery of the capabilities is prioritized and synchronized with the needs of the acquisition programs of record to ensure capability availability when needed.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
HW S - IPE Mannequin (PETMAN) Systems	C/CPFF	TBD	C	0	0	NONE	3700	1Q FY08	2775	1Q FY09	0	6475	0
HW S - CBART - System Fabrication/Installation	MIPR	Dugway Proving Grounds, DPG, UT	U	420	322	2Q FY07	0	NONE	1500	1Q FY09	0	2242	0
SW SB - MIST Sampling Hardware Procurement	MIPR	Dugway Proving Grounds, DPG, UT	U	500	418	3Q FY07	0	NONE	0	NONE	0	918	0
HW S - WSLAT Final Chamber Design	C/FFP	TBD	C	0	2380	2Q FY07	10000	1Q FY08	18566	1Q FY09	0	30946	0
HW GFPP - Test Grid Referee Instrumentation	C/CPFF	Lockheed Martin Integrated Systems, Wall, NJ	C	0	4274	2Q FY07	13144	2Q FY08	10772	2Q FY09	0	28190	0
HW S - Stimulants/Stimulator System Development	C/CPFF	ARINC Engineering, Annapolis, MD	C	0	929	2Q FY07	4300	2Q FY08	2000	2Q FY09	0	7229	0
HW S - Dynamic Test Chamber Design, Fabrication, Installation	MIPR	NAVSEA (JHU-APL), Washington, DC	U	500	2323	2Q FY07	6500	2Q FY08	2700	2Q FY09	0	12023	0
Subtotal I. Product Development:					10646		37644		38313		0	88023	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
ES S - WSLAT Optimization and Engineering Support	C/CPFF	Booz-Allen Hamilton, Belcamp, MD	C	180	125	1Q FY07	0	NONE	0	NONE	0	305	0
Subtotal II. Support Costs:					125		0		0		0	305	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
OTHT S - IPE Mannequin (PETMAN) System Validation	MIPR	Dugway Proving Grounds, DPG, UT	U	0	0	NONE	300	3Q FY08	225	3Q FY09	0	525	0
OTHT S - CBART Test Fixture Design/Testing	MIPR	Dugway Proving Grounds, DPG, UT	U	0	50	2Q FY07	600	1Q FY08	0	NONE	0	650	0
OTHT S - MIST Sampling System Validation	MIPR	Dugway Proving Grounds, DPG, UT	U	0	0	NONE	100	1Q FY08	0	NONE	0	100	0
OTHT SB - WSLAT M&S, Methodology Development, Validation Testing	MIPR	Various	U	1010	1955	1Q FY07	0	NONE	0	NONE	0	2965	0
OTHT S - Background/Interferent Collection	C/FFP	Lockheed Martin Integrated Systems, Wall, NJ	C	1000	2880	1Q FY07	3500	1Q FY08	0	NONE	0	7380	0
OTHT S - Dynamic Test Chamber Validation	MIPR	Various	U	0	0	NONE	500	1Q FY08	300	2Q FY09	0	800	0
OTHT S - Stimulants/Stimulators Validation	C/CPFF	TBD	C	0	0	NONE	200	2Q FY08	100	2Q FY09	0	300	0
OTHT S - ASC/JABT Modeling Studies, CB Simulants, and Validation	MIPR	Dugway Proving Grounds, DPG, UT	U	1190	465	2Q FY07	0	NONE	0	NONE	0	1655	0
Subtotal III. Test and Evaluation:					5350		5200		625		0	14375	

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

III. Test and Evaluation - Cont.

Remarks: PD TESS - Test efforts are for the validation of capabilities.

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PD TESS													
PM/MS S - Program Management/Systems Engineering Support	MIPR	JPM NBCCA, APG, MD	U	0	5833	1Q FY07	2760	1Q FY08	3543	1Q FY09	0	12136	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA		0	209	NONE	0	NONE	0	NONE	0	209	0
Subtotal IV. Management Services:					6042		2760		3543		0	12345	

Remarks:

TOTAL PROJECT COST:		22163		45604		42481		0	115048	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
PD TESS								
IPE Mannequin Design, Construction, Installation, Testing			1Q			3Q		
CBART System Design, Verification Testing & Methodology Prove Out	3Q		4Q					
CBART System Fabrication/Installation (DPG)				1Q 4Q				
MIST Upgrades	4Q		3Q					
Upgrade ColPro Facilities	3Q	4Q						
DPG ASC/JABT Upgrade	2Q	4Q						
Test Grid Instrument Network & Design	1Q							4Q
WSLAT Chamber Design/Fabrication	1Q			4Q				
Bio Standoff Facility Design & Fabrication				1Q				4Q
Bio Spectral Instrument Design, Development, Testing	3Q	4Q						
Stimulant/Stimulator Design, Fabrication, Testing		1Q		4Q				
Background/Interferent Signature Collection	2Q		4Q					

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
TE5

D. Schedule Profile (cont):	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
PD TESS (Cont)																																
DPG Chem Lab Upgrades				4Q												4Q																
Dynamic Test Chamber Design/Fabrication/Installation/Validation				4Q										2Q																		

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BUDGET ACTIVITY 6
RDT&E MGT SUPPORT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Budget Activity (BA) Cost		100510	82521	99053	100889	114164	116006	120932	123180	Continuing	Continuing
0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	90298	82521	99053	100889	114164	116006	120932	123180	Continuing	Continuing
0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	10212	0	0	0	0	0	0	0	0	10212

A. <u>Mission Description and Budget Activity Justification:</u> This program element provides research, development, testing and evaluation management support to the Department of Defense (DoD) Chemical and Biological Defense Program (CBDP).

PE0605384BP supports joint doctrine and training, sustainment of technical test capability at Dugway Proving Ground (DPG); and financial/program management support. Additionally, this program element funds the Joint Concept Development and Experimentation program (O49), which provides a response to Combatant Commanders and Services regarding joint tests and research assessments.

Joint Training and Doctrine Support (DT6) funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing CB defense systems. The training and doctrine efforts also fund 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. DW6 program funding provides for CB defense testing of DoD materiel, equipment, and systems from concept thru production, to include a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents at MRTFBs. It finances a portion of 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

The management support program (MS6) 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)), thru the Special Assistant, Chemical Biological Defense and Chemical Demilitarization Programs (SA(CBD&CDP)); execution 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 program also funds the Joint Test Infrastructure Working Group (JTIWG) program to provide a mechanism to address test infrastructure and technologies needed to support Developmental Testing (DT) and Operational Testing (OT) of Department of Defense (DoD) CB defense systems and components throughout the systems' acquisition life cycle, as required in the RDA Plan. The JTIWG program funds a series of methodology, instrumentation, and associated validation programs to provide test infrastructure and technologies for testing RDA systems needed to support all services.

The Joint Concept Development and Experimentation Program (O49) funds provide planning, conducting, evaluating, 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.

Laboratory Support (LS6) 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 Software Support Activity (IS6) funds support for the CBRN Warfighter with Joint service solutions for Information Assurance, Verification, Validation and Accreditation, and data management.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

This Budget Activity also funds the Small Business Innovative Research (SBIR) program. The overall objective of the CBD SBIR program is to improve the transition or transfer of innovative Chemical and Biological Defense (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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	90298	82521	99053	100889	114164	116006	120932	123180	Continuing	Continuing
DT6	JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	3838	3937	5372	5496	5486	5427	5650	5838	Continuing	Continuing
DW6	MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	51036	54482	53995	54924	52578	53921	57347	58676	Continuing	Continuing
IS6	INFORMATION SYSTEMS (RDT&E MGT SUPPORT)	1493	1527	0	0	0	0	0	0	0	3020
LS6	LABORATORY SUPPORT	0	0	5500	5500	20500	20500	20500	20500	Continuing	Continuing
MS6	RDT&E MGT SUPPORT	31139	19718	29921	30506	30952	31342	32364	33001	Continuing	Continuing
O49	JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&E	2792	2857	4265	4463	4648	4816	5071	5165	Continuing	Continuing

A. <u>Mission Description and Budget Item Justification:</u> This program element provides research, development, testing and evaluation management support to the DoD CB defense program.

This effort includes support to the DoD response to CB terrorism; funds joint doctrine and training support; funds sustainment of technical test capability at Dugway Proving Ground (DPG); and funds financial/program management support. Additionally, this program element funds the Joint Concept Development and Experimentation program (O49), which provides a response to Combatant Commanders and Services regarding joint tests and research assessments.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

Joint Training and Doctrine Support (DT6) funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing CB defense systems. The training and doctrine efforts also fund CB modeling and simulation to support the warfighter.

Dugway Proving Ground (DW6), a Major Range and Test Facility Base (MRTFB), funding provides for CB defense testing of DoD materiel, equipment, and systems from concept thru production; to include a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents. It finances a portion of the required institutional test operating costs. Institutional test operational costs include institutional civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

The management support program (MS6) provides management support for the DoD CB defense program to allow program overview and integration of overall medical and non-medical programs by the ATSD(NCB) thru the SA(CBD&CDP); execution management by the DTRA; integration of Joint requirements, management of training and doctrine by the JRO; Joint RDA planning, input to the Annual Report to Congress and POM development by the PA&IO; review of joint plans and the consolidated CB defense POM Strategy by the Army in its Executive Agent role.

The management support program also funds the Joint Test Infrastructure Working Group (JTIWG) program that provides a mechanism to address test infrastructure and technologies needed to support Developmental Testing (DT) and Operational Testing (OT) of DoD CBD systems and components throughout the systems' acquisition life cycle, as required in the RDA Plan. JTIWG program funds a series of methodology, instrumentation, and associated validation programs to provide test infrastructure and technologies for testing RDA systems needed to support all services.

Laboratory support sustains core DoD S&T laboratory infrastructure and ensures that the necessary surety operations can be conducted effectively and safely.

The Software Support Activity (IS6) funds support for the CBRN Warfighter with Joint service solutions for Information Assurance, Verification, Validation and Accreditation, and data management.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

The Joint Concept Development and Experimentation Program (O49) provides funding, planning, conducting, evaluating, 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	81494	80134	80335	83958
FY08 President's Budget	90298	82521	99053	100889
Total Adjustments	8804	2387	18718	16931
a. Congressional General Reductions	0	-313	0	0
b. Congressional Increases	0	2700	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	-793	15	0	0
e. Other Adjustments	9597	0	18718	16931

Change Summary Explanation:

Funding: FY06 - Realignment of funding to support the Joint Chemical Biological Defense Program management requirements (+$9,597K).

FY08 - Other funding realignments to support the Joint Chemical Biological Defense Program management requirements (+$926K O49; +$12,087K MS6; +$5,500K LS6; +$1,411 DT6; -$1.206K DW6).

FY09 - Other funding realignments to support the Joint Chemical Biological Defense Program management requirements (+$934K O49; +$10,075K MS6; +$5,500K LS6; +$1,430 DT6; -$1.008K DW6).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
DT6	JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	3838	3937	5372	5496	5486	5427	5650	5838	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DT6 JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT): 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 funds (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 United States Army Chemical School Joint Senior Leader Course (USACMLS JSLC); (4) assistance in correcting training and doctrine deficiencies covered in DODIG and GAO reports; (5) support of current and planned CBRN defense studies, analysis, training, exercises, and wargames; determine overlaps, duplication, and shortfalls; and build and execute programs to correct shortfalls in all aspects of CBRN defense also all DoD mission areas.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT REQUIREMENTS OFFICE DOCTRINE AND TRAINING	3838	3899	5372	5496

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
DT - FY 06/07/08/09 - Provide assistance in the development and enhancement of CBRN defense curriculum and wargaming at intermediate and senior level Joint and Service Colleges and Senior Service Non-Commissioned Officer Academies. Assistance and support for providing CBRN defense related improvements to the four phases of the Joint Training System at Combatant Commands. Provide assistance in the implementation of required solutions for appropriate representation of CBRN defense in Combatant Command's modeling and simulation tools. Provide CBRN defense related training support to Combatant Command staffs, services and the USCG.	1816	1857	5372	5496
DT - FY 06/07 - Support additional joint participation in the JSLC.	220	240	0	0
DT - FY 06/07 - Support the revision and development of CBRN defense medical and physical sciences MTTPs. Support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.	1802	1802	0	0
Total	**3838**	**3899**	**5372**	**5496**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	38	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	38	0	0
Total	**0**	**38**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
DW6	MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	51036	54482	53995	54924	52578	53921	57347	58676	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DW6 MAJOR RANGE AND TEST FACILITY BASE (MRTFB): Project DW6 MAJOR RANGE AND TEST FACILITY BASE (MRTFB): Project provides the technical capability for testing Department of Defense (DoD) Chemical and Biological (CB) defense materiel, equipment, and systems from concept thru production at Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB). Increased funding, beginning in FY06 reflects the DoD realignments to comply 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

Projects programmed for testing at DPG include: Chemical Biological Protective Shelter (CBPS); Joint Nuclear Biological Chemical Reconnaissance System (JNBCRS); Joint Service Lightweight Integrated Suit Technology (JSLIST) Additional Sources Qualification 2 (JASQ 2); JSLIST Block II Glove Upgrade and Alternate Foot Solution (AFS); Joint Biological Point Detection System (JBPDS); Joint Chemical Agent Detector (JCAD); Technical Readiness Evaluation for Biological Stand-off Detection Systems; Joint Service General Purpose Mask (JSGPM); Joint Warning and Reporting System (JWARN) Block II Phase 2; Chemical, Biological, Radiological, and Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR); Joint Protective Aircrew Ensemble (JPACE); Joint Biological Stand-off Detection System (JBSDS); Joint Chemical, Biological and Radiological Agent Water Monitor (JCBRAWM); Joint Service Aircrew Mask (JSAM); Joint Multipurpose Decontamination System (JMDS); Joint Effects Model (JEM); Joint Operations Effects Federation (JOEF); and Unified Command Suite (UCS).

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
DUGWAY PROVING GROUND	51036	53954	53995	54924

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 06/07/08/09 - Supports Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), CB test mission to include institutional civilian labor costs for Army PBG authorizations. These civilian personnel include safety, security, resource management, surety operations, range control, environmental oversight, and workload management. This represents the civilian labor required to support the test mission, but can not be directly tied to a single test and therefore, can not 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. Funding is essential to maintain this Nation's highest level of expertise in the area of testing CB defense technologies and equipment.	34987	37325	38970	39144

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 06/07/08/09 - Provides for postponed and ongoing sustainment of existing instrumentation and equipment at DPG in support of their CB test mission. 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.	5491	6603	6175	6550
DPG, MRTFB - FY 06/07/08/09 - Provides DPG with a dedicated and specially trained, 24-hour, support staff who operate and maintain all critical control systems, such as critically clean steam, highly complex HVAC system, and decontamination systems within DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.	1300	1756	1840	1930
DPG, MRTFB - FY 06/07/08/09 - Supports DPG test mission for contractor labor overhead costs. This is the institutional cost of providing contractual effort to this MRTFB including chemical analysis, field support, planning, and report documentation.	8020	8270	7010	7300
DPG, MRTFB - FY 06 - Provides the "Advanced Chemical/Biological Integrated Response Course" at DPG in support of their CB training mission, funded by this Congressional add, to train civil support teams.	1238	0	0	0
Total	**51036**	**53954**	**53995**	**54924**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	528	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
DW6

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	528	0	0
Total	**0**	**528**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **IS6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IS6	INFORMATION SYSTEMS (RDT&E MGT SUPPORT)	1493	1527	0	0	0	0	0	0	0	3020

A. Mission Description and Budget Item Justification:

Project IS6 INFORMATION SYSTEMS (RDT&E MGT SUPPORT): The JPEO-CBD SSA is a JPEO-CBD user developmental support and service organization supporting all JPMs and JPEO-CBD Directorates, and providing enterprise-wide services and coordination to facilitate net-centric interoperability. The SSA provides the CBRN Warfighter with Joint service solutions for Information Assurance, Verification, Validation and Accreditation (VV&A), and Data Management; interoperable and integrated net-centric, service-oriented, composable solutions for CBD; and infusion of latest technologies into programs of record. CBRN user community and related communities of interest have need for CBRN "plug and play" capability to allow interoperability and re-configurability across the enterprise. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
SOFTWARE SUPPORT ACTIVITY	1493	1512	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
IS6

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SSA - FY 06/07 - Manage and revise charter, plans, processes and procedures.	248	122	0	0
SSA - FY 06/07 - Establish tracking and reporting of IT Systems (IT Inventory).	302	386	0	0
SSA - FY 06/07 - Established configuration management plans and related CM support for the CBRN Data Model.	127	278	0	0
SSA - FY 06/07 - Tracked and reported IT Help Desk metrics for JPEO-CBD programs of record.	175	74	0	0
SSA - FY 06/07 - Provide and manage a Federal Information System Management Act (FISMA) database for tracking a variety of IT capabilities, such as J6 Interoperability Certification, Information Assurance (IA) components, Interim Authority to Operate/Authority to Operate (IATO/ATO), and Joint Capability Integration Documents (JCIDs) for enterprise programs.	287	342	0	0
SSA - FY 06/07 - Manage and track a repository of enterprise policies, standards and guidelines.	124	72	0	0
SSA - FY 06/07 - Establish, track and report performance indicator metrics to achieve net-centric interoperability.	230	238	0	0
Total	**1493**	**1512**	**0**	**0**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	15	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	15	0	0
Total	**0**	**15**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **LS6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
LS6	LABORATORY SUPPORT	0	0	5500	5500	20500	20500	20500	20500	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project LS6 LABORATORY SUPPORT: Maintain and enhance DoD laboratory infrastructure capabilities to counter an expanding threat space, exploit advances in technology and develop and transition CB defense equipment and countermeasures to the warfighter. This laboratory infrastructure program upgrades key systems to the current state-of-the-art capabilities. Key systems include; gas filters, controls, emergency, mechanical/electrical, and structural systems. The program will ensure that the necessary surety operations can be conducted effectively and safely in support of CBDP RDTE programs. The program will result in more robust capabilities, and ensure continuity of operations and environmental compliance.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
LABORATORY INFRASTRUCTURE	0	0	5500	5500

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **LS6**

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
Gas Filters - FY 08/09 - Modernize existing gas filters to include developing new filter designs with the capability of protecting against emerging threat agents.	0	0	1250	1250
Control Systems - FY 08/09 - Modernize mechanical and pneumatic control systems to full digital controls.	0	0	1000	1000
Emergency Systems - FY 08/09 - Modernize emergency systems to increase reliability and safety.	0	0	1000	1000
Mechanical/Electrical Systems - FY 08/09 - Provide redundancy in key systems to ensure worker safety, environmental compliance, and continuity of operations. Upgrades include low-flow hood alarms, redundant exhaust fans and HVAC controllers.	0	0	1250	1250
Structural Systems (Waste Collection and Decon/Neutralization) - FY 08/09 - Modernize to provide new methods of decontaminating and cleaning existing large scale agent dissemination test chambers. Upgrading these systems will ensure compatibility with the newer decontaminants and threat agents. Upgrading floors, foundations, and building structures will enhance the ability to store, package, and ship chemical surety material.	0	0	1000	1000
Total	**0**	**0**	**5500**	**5500**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
MS6	RDT&E MGT SUPPORT	31139	19718	29921	30506	30952	31342	32364	33001	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MS6 RDT&E MGT SUPPORT: 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 thru the Special Assistant, Chemical Biological Defense and Chemical Demilitarization Programs (SA(CBD&CDP)), and the Director, Defense Threat Reduction Agency (DTRA). Funds execution management is provided by DTRA.

The project also funds development, coordination and integration of joint Chemical, Biological, Radiological and Nuclear (CBRN) defense capability requirements, including assistance and support to the Combatant Commanders and Services to improve CBRN defense related doctrine, education, training, and awareness by the Joint Requirements Office (JRO) Joint CBRN defense Research, Development, and Acquisition (RDA) planning, input to the CBD Annual Report to Congress, and program guidance development by the Program Analysis and Integration Office (PA&IO).

The project includes programming support for the Joint Service CB Information System (JSCBIS) which serves as a budgetary and informational database for the DoD CBDP.

Funding is also provided for the Test and Evaluation (T&E) Executive, who is responsible for identifying, developing, and managing test infrastructure and 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 develop 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

Funding is also provided to develop Test Operating Procedures (TOPs) to standardize and document new test procedures and to update existing test procedures. All test infrastructure and technology programs will be centrally managed and coordinated with the Joint Service community to ensure that all Services' test and acquisition program needs are met.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT REQUIREMENTS OFFICE (JRO) MANAGEMENT	6746	3198	7945	8189

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JRO MGT - FY 06/07/08/09 - 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, and the CBD Annual Report to Congress.	6746	3198	7945	8189
Total	**6746**	**3198**	**7945**	**8189**

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT TEST INFRASTRUCTURE WORKING GROUP	4809	4885	5000	5015

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JTIWG - Provided Chemical and Biological Defense Program (CBDP) Test and Evaluation (T&E) Executive mission functions to ensure credible testing of CBDP systems, including direct acquisition program and DOT&E support, technical input and processing of acquisition documents to expedite Milestone decisions and test schedules for the Stryker Nuclear, Biological and Chemical Reconnaissance (NBCRV), Joint Service Lightweight Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), Joint Chemical Agent Detector (JCAD), Joint Biological Point Detector System (JBPDS), Joint Biological Agent Identification Detection system (JBAIDS), Joint Expeditionary Collective Protection (JECP), and Joint Biological Standoff Diagnostic System (JBSDS). Provided threat support documents for JCAD, JBSDS, JSLNBCRS, Joint Service Lightweight Integrated Suit Technology (JSLIST), Unified Command Suite (UCS), and Joint Service General Purpose Mask (JSGPM). Established mechanism for early involvement of the Operational Test Agencies (OTAs) and other T&E organizations in T&E infrastructure planning. Published the Overarching T&E Strategies Guide as a framework to defining the series of tests required over CB commodity areas as a planning tool for the T&E Infrastructure Investment Strategy and T&E Master Plan (TEMP) development. Provided input to Joint Program Executive Office - Chemical and Biological Defense (JPEO-CBD) and Joint Science and Technology Office - Chemical and Biological (JSTO-CB) regarding specific test methodology and test technology needs, to include input to the Technology Transition Handbook, participation in scientific review panels, and review of technology development plans. Provided guidance to improve the TEMP development process and to expedite Lead OTA assignment and overall OTA coordination. Led international T&E methodology development and standardization efforts to support the Canadian UK US Memorandum of Understanding (MOU). Provided T&E infrastructure input to the POM process and supported the Joint Requirements Office (JRO), Program Analysis and Integration Office (PAIO), and the Special Assistant to Assistant to the Secretary of Defense Nuclear Chemical and Biological Defense for Chemical and Biological Defense and Chemical Demilitarization Programs (SA(CBD & CDP)) in development and defense of the FY 08 - 13 budget.	4809	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
JTIWG - Continue T&E Executive mission support to ensure credible testing of CBDP systems and support to DOT&E for OSD T&E Oversight. Continue direct support to JPEO-CBD and JRO Integrated Process Teams (IPTs) and Integrated Concept Teams (ICTs) providing technical assistance to structure acquisition programs and test scopes. Continue early involvement of the Operational Test Agencies (OTAs) and other T&E organizations in T&E infrastructure planning. Continue development of threat test support documentation to support developmental and operational tests in which an operational threat must be presented, including Joint Warning and Reporting Network (JWARN), JCAD, JBAIDS, Joint Service Air Crew Mask (JSAM), Analytical Laboratory System (ALS), and Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS). Continue support to JPEO-CBD and JSTO-CB regarding specific test methodology and test technology needs, to include updates to the Technology Transition Handbook, participation in scientific review panels, and review of technology/methodology development plans. Continue to provide guidance to improve the TEMP and threat support documentation development process and to expedite Lead OTA assignment and overall coordination. Continue to lead International T&E methodology development and standardization efforts to support the Canadian UK US MOU, now with Australia added. Provide T&E infrastructure input to the POM process and supported JRO, PAIO, and SA(CBD & CDP) in development and defense of the FY09 mini POM and the FY 10 - 15 budget development.	0	4885	5000	5015
Total	**4809**	**4885**	**5000**	**5015**

	FY 2006	FY 2007	FY 2008	FY 2009
OFFICE SECRETARY OF DEFENSE MGMT	14793	6571	11926	12143

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
OSD MGT - Perform program reviews/assessments, provide programmatic PPBE oversight/analysis, provide congressional issue analysis and support. Supports financial management services provided by the DTRA such as funding distribution and execution reporting.	14793	6571	11926	12143
Total	**14793**	**6571**	**11926**	**12143**

	FY 2006	FY 2007	FY 2008	FY 2009
PROGRAM ANALYSIS AND INTEGRATION OFFICE (PA&IO) MGT	4791	4871	5050	5159

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
PA&IO MGT- Develop assessments to support RDA Planning. Provide analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the PB submissions. Respond to specialized evaluation studies throughout the PPBE process. Provide JSCBIS database management.	4791	4871	5050	5159
Total	**4791**	**4871**	**5050**	**5159**

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	193	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
MS6

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	193	0	0
Total	**0**	**193**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT **O49**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
O49	JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&E	2792	2857	4265	4463	4648	4816	5071	5165	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project O49 JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&E: 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 operational research assessments in response to requirements received from the Combatant Commanders and the Services. This program will provide ongoing input to the Combatant Commanders and Services for development of doctrine, policy, training procedures, and feedback into the Research, Development, Testing & Evaluation (RDT&E) cycle.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM	2792	2830	4265	4463

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCDE - FY 06/07/08/09 - Support the JCD for CBRND in conducting work shops, 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.	2792	2830	4265	4463
Total	**2792**	**2830**	**4265**	**4463**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
O49

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	27	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	27	0	0
Total	**0**	**27**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	10212	0	0	0	0	0	0	0	0	10212
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	10212	0	0	0	0	0	0	0	0	10212

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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	0	0	0	0
FY08 President's Budget	10212	0	0	0
Total Adjustments	10212	0	0	0
a. Congressional General Reductions	0	0	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	10212	0	0	0
e. Other Adjustments	0	0	0	0

Change Summary Explanation:

Funding: FY06 - Funding transferred and applied to SBIR program (+$10,212K).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT **SB6**

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	10212	0	0	0	0	0	0	0	0	10212

A. Mission Description and Budget Item Justification:

Project SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR): 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 thru 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 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT **SB6**

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.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	10212	0	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT
SB6

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 06 - Small Business Innovative Research	10212	0	0	0
Total	**10212**	**0**	**0**	**0**

BUDGET ACTIVITY 7
OPERATIONAL SYSTEMS DEVELOPMENT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	9671	7008	7716	10359	12707	14841	15376	14050	Continuing	Continuing
CA7	CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	9671	7008	0	0	0	0	0	0	0	16679
IP7	INDIVIDUAL PROTECTION OPERATIONAL SYS DEV	0	0	0	2240	4436	4837	5380	4203	Continuing	Continuing
IS7	INFORMATION SYSTEMS (OP SYS DEV)	0	0	700	918	1349	1910	1761	1612	Continuing	Continuing
TE7	TEST & EVALUATION (OP SYS DEV)	0	0	7016	7201	6922	8094	8235	8235	Continuing	Continuing

A. <u>Mission Description and Budget Item Justification:</u> This program element provides development 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 detectors against emerging chemical threat agents and toxic industrial chemicals.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

B. Program Change Summary:	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Previous President's Budget (FY 2007 PB)	9949	7035	9928	19059
FY08 President's Budget	9671	7008	7716	10359
Total Adjustments	-278	-27	-2212	-8700
a. Congressional General Reductions	0	-27	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	-97	0	0	0
e. Other Adjustments	-181	0	-2212	-8700

Change Summary Explanation:

Funding: FY08 - Restructure of the overall BA7 program effort and establishment of project to upgrade existing instrumentation and equipment at Dugway Proving Ground (-$7,016K CA7; -$2,912K IP7; -$700K IS7; +$7,016K TE7).

FY09 - Restructure of the overall BA7 program effort and establishment of project to upgrade existing instrumentation and equipment at Dugway Proving Ground (-$7,207K CA7; -$9,612K IP7; -$918K IS7; +$7,201K TE7).

Schedule: N/A

Technical: N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
CA7	CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	9671	7008	0	0	0	0	0	0	0	16679

A. Mission Description and Budget Item Justification:

Project CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV: This project provides revitalization and technology upgrade 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 Program

	FY 2006	FY 2007	FY 2008	FY 2009
DETECTOR MODS	1890	0	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
DETECTMOD - FY 06 - (ACADA Enhancement) Designed and tested enhanced ACADA configurations, including upgrades to platform data interfaces.	550	0	0	0
DETECTMOD - FY 06 - (ICAM High Temperature Storage) Designed efforts, switching emphasis from switchable acetone source to greatly expanded acetone source. Investigated and proved out alternate seal materials.	200	0	0	0
DETECTMOD - FY 06 - Provided strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	1077	0	0	0
DETECTMOD - FY 06 - Biological Aerosol Warning Sensor - 4 (BAWS4) Ambient Breeze Tunnel (ABT) testing at DPG for test alternative systems were compared to the BAWS4.	63	0	0	0
Total	**1890**	**0**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

	FY 2006	FY 2007	FY 2008	FY 2009
T&E RANGE INSTRUMENTATION/TECHNOLOGY UPGRADE	7781	6940	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 06/07 - Provides for upgrade of the Life Sciences Test Facility instrumentation and equipment at Dugway Proving Ground (DPG), in support of their CB test mission. This is the only U.S. facility equipped to test with aerosolized Biosafety Level 3 (BSL-3) agents. Upgrades include replacement of old Scanning Electron Microscopes, light microscopes, and old Aerodynamic Particle Sizers with newer Fluorescent Aerodynamic Particle Sizers. These items will be replaced using a phased approach over several years. Modernization projects include developing biological decontamination sampling methods, full characterization of biological aerosols in various conditions inside the test chambers, an automated aerosol dissemination system that will vary the concentration of the aerosol cloud, new methods of sampling biologics using mimetics, and developing a deployable Polymerase Chain Reaction sampling system for use in the field testing of biological detection systems. Also in FY 06, technology enhancements included the upgrade of the Containment Aerosol Chamber (CAC) with capability to create environmental conditions with varying combinations of air temperature and relative humidity, and microbiological laboratory equipment needed to utilize new BioSafety Level 3 laboratories constructed in FY05. In FY 07, enhancements also include genetic-sequencer/analyzer characterization, capability for rapid antibody production to support biosensor testing, and instrumentation for new BSL-3 laboratory space.	2107	1804	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 06/07 - 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. Included are the first set of software upgrades for 100 Miniature Chemical Agent Monitors (MINICAMS) to comply with lower level of Airborne Exposure Limits adopted by the US Army in June 2004. Other modernization projects will develop an improved nano-particle simulant dissemination and sampling system for testing protective fabrics, a dynamic dissemination method for chemical vapors varying concentration over time for the testing of detectors, and developing a versatile, multi-configurable test chamber for the testing of single small items. Technology upgrades in FY 06 include: portable mass-spectrometer point detector to support operational testing of an articulated headform allowing testing of the protective masks and components, and second generation glove fixture incorporating operational movements. In FY 07 , technology upgrades include: characterization of new and upgraded test fixtures, upgraded control systems for small chambers and development of a laboratory information-management system.	2254	1997	0	0

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 06/07 - Enhances existing instrumentation and equipment at the Target S, Downwind, and Tower CB Test Grids at DPG, in support of their CB test mission. The CB Test Grids are critical for all Developmental Test/Operational Test of CB defense systems. Modernization includes the continued development of a realistic CB threat generation system where challenges for detectors will be done with explosives and dissemination devices that will be present in battlefield situations, a Portable Chemical Simulant Cloud Generator that will produce a large reproducible cloud of vapor, and continued modernization of the Aerosol Simulant Exposure Chamber for new simulants. In FY 06, additional technology upgrades included low-range and high-range vertical wind profilers, high resolution video-recording capability for test grids, LIDAR referee systems for real-time simulant cloud characterization, and distributed-test capabilities. In FY 07, real-time data fusion systems for field testing will be implemented and integrated with new weather-characterization and wind-profiling capabilities, and telemetric data-transfer capabilities will be instituted to support field tests.	1220	1237	0	0
DPG, MRTFB - FY06/07 - Provides for modernization of existing instrumentation and equipment in the major test chambers at DPG, in support of the CB test mission. These consist of (1) the Materiel Test Facility which is a unique test chamber where real-world decontamination operations can be tested; (2) the Defensive Test Chamber which is a large chamber, currently the site of the Man-in-Simulant Test (MIST) for the testing of chemical protective ensembles; 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 is conducted. Modernization in the chambers includes the development of a chemical aerosol generation and sampling capability, and real-time sampling system for use under protective suits in the MIST chamber. FY 06 also provides for upgraded supervisory control and data acquisition systems for controlling testing conditions in chemical test fixtures and chambers and construction of articulated testing fixtures. In FY07, characterization of articulated testing fixtures constructed during FY06 will commence.	2200	1902	0	0
Total	**7781**	**6940**	**0**	**0**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

	FY 2006	FY 2007	FY 2008	FY 2009
SBIR/STTR	0	68	0	0

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SBIR - FY 07 - Small Business Innovative Research.	0	68	0	0
Total	**0**	**68**	**0**	**0**

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

DETECTMOD — Continuously evaluate fielded and developmental detectors for enhancement of capabilities.

ACADA 24/7 Model-D and TIC detection capability development using FPIF contracts to the ACADA vendor. The ACADA vendor was previously competitively selected as the sole source to meet the joint service ACADA performance specification requirements. Technical testing of detectors to be performed in-house at the Edgewood Chemical Biological Center (ECBC) agent laboratories (primary source), or on task contracts to commercial laboratories (secondary source). Development of NBC Reconnaissance interface software for TIC detection capability to be performed on a competitive task order contract.

Completion of efforts to develop a solids/liquids detection capability for the M256A1 Kit.

T&E UPGRAD — T&E Range Instrumentation/Technology Upgrades is a continuing project. It provides for technical upgrades to DPG capabilities for testing DoD Chemical and Biological (CB) materiel, weapons, and weapons systems from concept thru production.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **CA7**

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E UPGRAD													
Dugway Proving Ground Upgrade	C/FP	TBD	U	7781	6940	2Q FY07	0	NONE	0	NONE	0	14721	0
Subtotal III. Test and Evaluation:					6940		0		0		0	14721	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **CA7**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD		0	68	NONE	0	NONE	0	NONE	0	68	0
Subtotal IV. Management Services:					68		0		0		0	68	
Remarks:													
TOTAL PROJECT COST:					7008		0		0		0	14789	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
DETECTMOD								
Eval Tech Upgrds of Flded Detectors	>>	4Q						
ACADA 24/7 Model-D Upgrade Development	1Q 4Q							
ACADA 24/7 Model-D Technical Tests	4Q	2Q						
ACADA 24/7 TIC Technical Tests	2Q 3Q							
M22 ACADA TIC Detection HW/SW Development	4Q	3Q						
M22 ACADA TIC Detection Tests		3Q 4Q						
ICAM Prototype Manufacture & Test	4Q	3Q						
ICAM Changes to Tech Data Package		4Q						
M256A1 PIP Development Program Completion		1Q 3Q						
T&E UPGRAD								
LSTF Instrumentation & Equip Upgrades, DPG	2Q	4Q						
Modernization of Major Test Chambers, DPG	2Q	4Q						

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

D. Schedule Profile (cont):	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
T&E UPGRAD (Cont)								
Enhance Instrumentation & Equip at Target S, Downwind, & Tower CB Test Grids, DPG	2Q	4Q						
Revitalize & Upgrade Instrumentation & Equip at Combined Chemical Test Facility, DPG	2Q	4Q						

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IP7

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IP7	INDIVIDUAL PROTECTION OPERATIONAL SYS DEV	0	0	0	2240	4436	4837	5380	4203	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project IP7 INDIVIDUAL PROTECTION OPERATIONAL SYS DEV: Joint Chemical Ensemble (JCE): A Family of Systems (FOS) that will provide integrated CB protection to the warfighter. Will provide enhanced protection against Non-Traditional Agents. The goal of JCE is to incorporate CB protection into the battle dress uniform, gloves, and footwear. JCE will be the CB protection capability in the Soldier as a System concept.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JOINT CHEMICAL ENSEMBLE	0	0	0	2240

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
JCE - FY 09 - Initiate IPT to explore integration concepts.	0	0	0	1590
JCE - FY 09 - Initiate hierarchical requirement . New integration concepts, materials and designs present trade-offs in multiple areas of capability. This effort will weigh warfighter requirements in order to ensure that all material and design selections can be traced to the improvements in operational capability most in demand.	0	0	0	650
Total	**0**	**0**	**0**	**2240**

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**IP7**

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

JCE

The JCE program strategy employs an evolutionary approach to provide a system that protects against emerging chemical, biological agent, toxic industrial chemical and toxic industrial materials across all mission areas and profiles. The JCE acquisition strategy supporting the chemical and biological requirements of major defense acquisition programs will use full and open competition.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IP7

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCE													
Initiate IPT	MIPR	Various	U	0	0	NONE	0	NONE	650	1Q FY09	0	650	0
Hierarchical Development	MIPR	Various	U	0	0	NONE	0	NONE	1590	1Q FY09	0	1590	0
Subtotal I. Product Development:					0		0		2240		0	2240	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

TOTAL PROJECT COST:		0		0		2240		0	2240	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IP7

D. Schedule Profile:	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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	1	2	3	4
JCE																																
Initiate IPT													1Q																			

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IS7

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
IS7	INFORMATION SYSTEMS (OP SYS DEV)	0	0	700	918	1349	1910	1761	1612	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project IS7 INFORMATION SYSTEMS (OP SYS DEV): The project supports the JPEO-CBD Software Support Activity (SSA). The JPEO-CBD SSA is a JPEO-CBD user developmental support and service organization supporting all JPMs and JPEO-CBD Directorates, and providing enterprise-wide services and coordination to facilitate net-centric interoperability. The SSA provides the CBRN Warfighter with Joint service solutions for Information Assurance, Verification, Validation and Accreditation (VV&A), and Data Management; interoperable and integrated net-centric, service-oriented, composable solutions for CBD; and infusion of latest technologies into programs of record. CBRN user community and related communities of interest have need for CBRN "plug and play" capability to allow interoperability and re-configurability across the enterprise. The requirement for net-centric, composable solutions provides the near term foundation for the Warfighter's ability to communicate his CBRN solutions and interoperate with other service operational systems. It also supports a longer term ability to interoperate with related agencies and to reduce the Warfighter's CBRN footprint as technologies improve.

B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
SOFTWARE SUPPORT ACTIVITY	0	0	700	918

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
SSA - FY 08/09 - Implement the Enterprise technical C4I architecture.	0	0	134	159
SSA - FY 08/09 - Analyze requirements and assist programs with implementation of the CBRN data model.	0	0	52	129
SSA - FY 08/09 - Support CBRN data model updates.	0	0	48	54

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IS7

Accomplishments/Planned Program (Cont):	**FY2006**	**FY2007**	**FY2008**	**FY2009**
SSA - FY 08/09 - Provide Information Assurance compliance testing for JPEO-CBD programs.	0	0	57	59
SSA - FY 08/09 - Provide Enterprise Modeling & Simulation (M&S), Verification, Validation, & Accreditation (V, V & A) Support.	0	0	154	161
SSA - FY 08/09 - Provide ISP Development Support for JPEO-CBD programs.	0	0	59	117
SSA - FY 08/09 - Provide developmental Help Desk support for JPEO-CBD programs and users until they transition to sustainment funding.	0	0	196	239
Total	**0**	**0**	**700**	**918**

C. <u>Other Program Funding Summary:</u> N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**IS7**

D. Acquisition Strategy:

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].

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].

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **IS7**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SSA													
Development Services	MIPR	SPAWAR System Center, San Diego, CA	U	0	0	NONE	248	1Q FY08	368	1Q FY09	0	616	0
Subtotal I. Product Development:					0		248		368		0	616	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SSA													
Develop Support Activities	MIPR	SPAWAR Systems Center, San Diego, CA	U	0	0	NONE	241	1Q FY08	330	1Q FY09	0	571	0
Subtotal II. Support Costs:					0		241		330		0	571	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **IS7**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SSA													
Integration Verification and Valuation (IV&V)	MIPR	SPAWAR Systems Center, San Diego, CA	U	0	0	NONE	211	1Q FY08	220	1Q FY09	0	431	0
Subtotal III. Test and Evaluation:					0		211		220		0	431	

Remarks:

IV. Management Services: Not applicable

TOTAL PROJECT COST:		0		700		918		0	1618	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
IS7

D. Schedule Profile:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
SSA								
Establish SSA Charter, Management Plans, Processes, Procedures	>> 2Q							
Develop Enterprise IT Support Plan	>> — 4Q							
Begin support services for Architecture, Data, Help Desk, Integration & Test, and Standards and Policies	>> —	— 2Q						
Establish CM Services for the Enterprise JCBRND Products	>> 2Q							
Provide Data Model Implementation Guidance	1Q —	—	—	—	—	—	—	— 4Q
Establish an Information Assurance Support Capability	1Q —	— 2Q						
Provide Enterprise Architecture Products and Services	2Q —	—	—	—	—	—	—	— 4Q
Demonstrate Technology Transition Capabilities		2Q —	—	—	—	—	—	— 4Q
Provide Information Assurance Site Compliance Testing	3Q —	—	—	—	—	—	—	— 4Q

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **IS7**

D. Schedule Profile (cont):	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
SSA (Cont)								
Provide Integration and Test, M&S, VV&A Certification and Accreditation	2Q							4Q
Establish Technology Transition Support Services	1Q	2Q						

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
TE7

COST (In Thousands)		FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
TE7	TEST & EVALUATION (OP SYS DEV)	0	0	7016	7201	6922	8094	8235	8235	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TE7 TEST & EVALUATION (OP SYS DEV): 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 Program

	FY 2006	FY 2007	FY 2008	FY 2009
T&E RANGE INSTRUMENTATION/TECHNOLOGY UPGRADE	0	0	7016	7201

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
TE7

Accomplishments/Planned Program	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 08/09 - Provides for upgrade of the Life Sciences Test Facility instrumentation and equipment at Dugway Proving Ground (DPG), in support of their CB test mission. This is the only U.S. facility equipped to test with aerosolized Biosafety Level 3 (BSL-3) agents. Upgrades include replacement of old Scanning Electron Microscopes, light microscopes, and old Aerodynamic Particle Sizers with newer Fluorescent Aerodynamic Particle Sizers. These items will be replaced using a phased approach over several years. Modernization projects include developing biological decontamination sampling methods, full characterization of biological aerosols in various conditions inside the test chambers, an automated aerosol dissemination system that will vary the concentration of the aerosol cloud, new methods of sampling biologics using mimetics, developing a deployable Polymerase Chain Reaction sampling system for use in the field testing of biological detection systems, upgrade of the Containment Aerosol Chamber (CAC) with capability to create environmental conditions with varying combinations of air temperature and relative humidity, and microbiological laboratory equipment needed to utilize new BioSafety Level 3 laboratories constructed in FY05.	0	0	1804	1804
DPG, MRTFB - FY 08/09 - Provides for modernization of existing instrumentation and equipment in the major test chambers at DPG, in support of the CB test mission. These consist of (1) the Materiel Test Facility which is a unique test chamber where real-world decontamination operations can be tested; (2) The Defensive Test Chamber which is a large chamber, currently the site of the Man-in-Simulant Test (MIST) for the testing of chemical protective ensembles; and (3) Building 3445, which houses two large chambers where testing of large panel decontaminants, filter systems, and IPE in a chemical environment is conducted. Modernization of the chambers includes the continued development of a chemical aerosol generation and sampling capability, and real-time sampling system for use under protective suits in the MIST chamber. Characterization of articulated testing fixtures constructed during FY06 will commence.	0	0	1997	1997

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

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0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
TE7

Accomplishments/Planned Program (Cont):	FY2006	FY2007	FY2008	FY2009
DPG, MRTFB - FY 08/09 - Enhances existing instrumentation and equipment at the Target S, Downwind, and Tower CB Test Grids at DPG, in support of their CB test mission. The CB Test Grids are critical for all Developmental Test/Operational Test of CB defense systems. Modernization includes the continued development of a realistic CB threat generation system where challenges for detectors will be done with explosives and dissemination devices that will be present in battlefield situations, a Portable Chemical Simulant Cloud Generator that will produce a large reproducible cloud of vapor, and continued modernization of the Aerosol Simulant Exposure Chamber for new simulants. Real-time data fusion systems for field testing will be implemented and integrated with new weather-characterization and wind-profiling capabilities, and telemetric data-transfer capabilities will be instituted to support field tests.	0	0	1237	1237
DPG, MRTFB - FY 08/09 - Provide 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. Other modernization projects will continue to develop an improved nano-particle simulant dissemination and sampling system for testing protective fabrics, a dynamic dissemination method for chemical vapors varying concentration over time for the testing of detectors, developing a versatile, multi-configurable test chamber for the testing of single small items, characterization of new and upgraded test fixtures, upgraded control systems for small chambers and development of a laboratory information-management system.	0	0	1978	2163
Total	**0**	**0**	**7016**	**7201**

C. <u>Other Program Funding Summary:</u> N/A

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)

DATE
February 2007

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**TE7**

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 testing DoD Chemical and Biological (CB) materiel, weapons, and weapons systems from concept thru production.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **TE7**

I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2007 Cost	FY2007 Award Date	FY2008 Cost	FY2008 Award Date	FY2009 Cost	FY2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E UPGRAD													
Technology Upgrades - DPG, UT	C/FP	Dugway Proving Grounds, DPG, UT	C	0	0	NONE	7016	2Q FY08	7201	2Q FY09	0	14217	0
Subtotal III. Test and Evaluation:					0		7016		7201		0	14217	

Remarks:

IV. Management Services: Not applicable

TOTAL PROJECT COST:		0		7016		7201		0	14217	

Exhibit R-4a, Schedule Profile

DATE **February 2007**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT **TE7**

D. Schedule Profile:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	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	1 2 3 4
T&E UPGRAD								
LSTF Instrumentation & Equip Upgrades, DPG	2Q	4Q						
Modernization of Major Test Chambers, DPG	2Q	4Q						
Enhance Instrumentation & Equip at Target S, Downwind, & Tower CB Test Grids, DPG	2Q	4Q						
Revitalize & Upgrade Instrumentation & Equip at Combined Chemical Test Facility, DPG	2Q	4Q						

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