Department of Defense Fiscal Year (FY) 2007 President's Budget

February 2006

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

Volume 4

Chemical Biological Defense Program (CBDP)

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Fiscal Year (FY) 2007 Budget Request

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Department of Defense Chemical/Biological Defense Program Overview

Fiscal Year (FY) 2007 President's Budget

The DoD Chemical and Biological (CB) Defense Program is a key part of a comprehensive national strategy to counter the threat of chemical and biological weapons as outlined in the National Strategy to Combat Weapons of Mass Destruction, December 2002. This national strategy is based on three principal pillars: (1) Counterproliferation to Combat WMD Use, (2) Strengthened Nonproliferation to Combat WMD Proliferation, and (3) Consequence Management to Respond to WMD Use. The DoD CB Defense Program (CBDP) provides research, development, and acquisition (RDA) programs primarily to support the first and third 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 counterproliferation, 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 through the far term. This budget includes support of a comprehensive science and technology base program to ensure continued advances in CB defense capabilities. CBDP Basic Research provides core capabilities to ensure U.S. technological advantages through 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 FY07, 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 FY07, the CBDP supports DTOs including capabilities for Environmental Fate of Nontraditional Agents, Low-Level Chemical Warfare Agent Exposure: Effects and Countermeasures, Chemical Warfare Agent Operational Exposure Hazard Assessment Research, Self-Detoxifying Materials for Chemical/Biological Protective Clothing, Advanced Air Purification System Model, Hazard Prediction with Nowcasting, Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems, Therapy for Smallpox and Other Pathogenic Orthopoxviruses, Western and Eastern Equine Encephalitis Vaccine Constructs for a Combined Equine Encephalitis Vaccine, Therapeutics for Ebola and Marburg Virus Infections, Lightweight Integrated Chemical/Biological Detection, and Multiagent (Molecular) Vaccines for Biowarfare Agents.

Technologies currently 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. As described in the National Strategy to Combat Weapons of Mass Destruction, 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 FY07 include: the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) for standoff chemical agent detection, 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, Advanced Concept Technology Demonstrations (Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) and Situational Awareness and Response Network (STARNET)), Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS), Joint Service Sensitive Equipment Decontamination (JSSED), Joint Service Personnel/Skin Decontamination System (JSPDS), Advanced Anticonvulsant System, Plasma and Recombinant Bioscavenger, Improved Nerve Agent Treatment System (INATS), biological defense vaccines (including recombinant 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 Biological Point Detection System (JBPDS), Joint Service Chemical/Biological/Radiological Agent Water Monitor (JCBRAWM), Joint Biological Standoff Detection System (JBSDS) Increment II, Joint Bio Tactical Detection System (JBTDS), Joint Biological Agent Identification and Diagnostic System (JBAIDS) Increment II, Joint Warning and Reporting Network (JWARN), Joint Collective Protection Equipment (JCPE), Joint Expeditionary Collective Protection, Joint Service Aircrew Mask (JSAM) and Medical Radiological Countermeasures.

In FY07, 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 FY07 include JSPDS, JCAD, and JBAIDS Increment II. Systems continuing procurement in FY07 include Automatic Chemical Agent Detector and Alarm (ACADA), 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, JBAIDS, Joint Service Mask Leakage Tester (JSMLT), Joint Service Lightweight Integrated Suit Technology (JSLIST), the NBC Reconnaissance Vehicle (NBCRV), Joint Service Light NBC Reconnaissance System (JSLNBCRS), JSLSCAD, JBPDS, biological defense vaccines (Anthrax Vaccine Adsorbed), CB Protective Shelters (CBPS), Collective Protective Field Hospitals (CPFH), Collective Protection System Backfit (CPSBKFT), and chemical and biological defense equipment for installation force protection.

The FY07 program continues to support the consequence management (CM) mission. CM projects fund the development of the Unified Command Suite (UCS) and Analytical Laboratory System (ALS) Block upgrades. CM funding provides for the modernization to address objective operational capabilities for the National Guard WMD Civil Support Teams (CSTs), the Reserve Component (RC) Reconnaissance, and RC Decontamination Teams. It provides full funding for: (1) type-classified protection, detection, and training equipment; (2) development and fielding of upgraded analytical platforms for the detection, identification, and characterization of chemical, biological, and radiological agents used by terrorists in a civilian environment; (3) development and fielding of communication capabilities that are interoperable with other federal, state, and local agencies; (4) testing and evaluation to ensure that the systems fielded are safe and effective; and (5) program management funds.

Overall, the FY 2007 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. The primary area of increased emphasis in this year's budget is the CB Defense Program's novel biodefense initiatives. The budget adds funding for novel biodefense initiatives which take advantage of biotechnology and genetics advances. The focus of these biodefense initiatives is on interrupting the disease cycle before and after exposure, as well as addressing the bioengineered threat. This effort is part of the Quadrennial Defense Review (QDR) "leading edge" investment to develop broad spectrum medical countermeasures against future genetically-engineered bio-terror threats, for which there are no current defenses.

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.

Chemical and Biological Defense Program
Fiscal Year (FY) 2006-2011 Program and Budget Review

APPROPRIATION: 0400D Research, Development, Test & Eval, Defense Wide **Date: February 2006**

Line No	Program Number	Item	Budget Activity	FY 2005	FY 2006	FY 2007
				Thousands of Dollars		
006	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	51,998	94,366	99,182
	Basic Research			**51,998**	**94,366**	**99,182**
014	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	172,120	246,953	280,422
	Applied Research			**172,120**	**246,953**	**280,422**
031	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	3	175,182	234,039	207,114
	Advanced Technology Development (ATD)			**175,182**	**234,039**	**207,114**
070	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	4	125,420	122,274	73,111
	Advanced Component Development and Prototypes (ACD&P)			**125,420**	**122,274**	**73,111**
091	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (SDD)	5	138,278	260,279	212,072
	System Development and Demonstration (SDD)			**138,278**	**260,279**	**212,072**
133	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	6	43,785	81,494	80,134
000	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	5,860	0	0
	RDT&E Mgt Support			**49,645**	**81,494**	**80,134**
155	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	7	2,070	9,949	7,035
	Operational Systems Development			**2,070**	**9,949**	**7,035**
	Total Chemical and Biological Defense Program			**714,713**	**1,049,354**	**959,070**

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BUDGET ACTIVITY 1
BASIC RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2006**

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

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

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	51998	94366	99182	79149	64565	56330	56314	Continuing	Continuing
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	10710	28808	16082	17130	17874	16271	18154	Continuing	Continuing
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	32308	54902	72356	49050	33805	26521	25222	Continuing	Continuing
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	8980	10656	10744	12969	12886	13538	12938	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)

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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 2006

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

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

B. Program Change Summary:		**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		54056	72533	52701
Current Biennial Budget Estimate (FY 2007)		51998	94366	99182
Total Adjustments		-2058	21833	46481
a. Congressional General Reductions		-42	-1367	0
b. Congressional Increases		0	23200	0
c. Reprogrammings		-1574	0	0
d. SBIR/STTR Transfer		-442	0	0
e. Other Adjustments		0	0	46481

Change Summary Explanation:

Funding: FY06 - Congressional increases to enhance projects within the science and technology base (+$13,400K CB1; +$9,800K TB1). Congressional general reductions and other adjustments (-$299K CB1; -$864K TB1; -$204K TC1).

FY07 - Increase to enhance Medical Biological research efforts in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (+$46,500K TB1). Defense-wide directed offsets (-$432K CB1; -$679K TB1; -$289K TC1). Inflation adjustment (+$224K CB1; +$1,007K TB1; +$150K TC1).

Schedule: N/A

Technical: N/A

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	10710	28808	16082	17130	17874	16271	18154	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 2005	FY 2006	FY 2007
Congressional Interest Items	4959	13269	0

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**CB1**

FY 2005 Accomplishments:

- 992 New York Structural Biology Center - Continued a basic research program that leveraged exceptional sensitivity and resolution of high-field 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.
- 3967 Fluorescence Activated Sensing Technology (FAST) Integrated Threat Management System - Continued a multi-phased basic research program that will include 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.

Total 4959

FY 2006 Planned Program:

- 6931 CBDP Basic Research Initiative - Conduct a basic research program that will investigate technologies and methodologies for the rapid detection of, and protection from biological agents.

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**CB1**

FY 2006 Planned Program (Cont):

- 1981 Fluorescence Activated Sensing Technology (FAST) Integrated Threat Management System - Continues a multi-phased basic research program that will include 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; evaluation of the detection system for the above threat agents using fluorescent probes; evaluation of techniques consistent with the FAST process to identify Ribonucleic acid (RNA) viruses, protein toxins and nerve and mustard agents; development of a prototype stand-alone instrument with an integrated air sampler and sonicator and a decision and control system with external communications.
- 991 New York Structural Biology Center - Continue a basic research program that leverages exceptional sensitivity and resolution of high-field Nuclear Magnetic Resonance Spectrometers (NMRS) technology to permit atomic-level structural characterization of chemical compounds. Validate protocols that monitor the fate of chemical and biological warfare agents in battlefield and civilian environments such as concrete, asphalt, soil and water.
- 990 Superstructural Particle Evaluation & Characterization with Targeted Reaction Analysis (SPECTRA).
- 990 Photoscrub.
- 1386 Detection of Biological Agents in Water - Investigate technologies for the detection of biological agents in potable water sources.

Total 13269

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

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

PROJECT
CB1

	FY 2005	FY 2006	FY 2007
Decontamination	936	0	0

FY 2005 Accomplishments:

- 936 Decontamination - Completed research effort to assess potential of ionic liquids for agent decontamination capability. Completed research effort to assess potential of metal catalysis for agent decontamination capability.

Total 936

	FY 2005	FY 2006	FY 2007
Detection	2175	0	0

FY 2005 Accomplishments:

- 975 Integrated CB Detection - Completed investigations of modified nanofilaments for the detection of CB agents. Completed investigations of modified gold nanosensors.

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

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

PROJECT
CB1

FY 2005 Accomplishments (Cont):

- 1200 Biological Agent Identification Detection - Completed testing of candidate ion channel stochastic sensor elements. Completed investigations of micro-channel mixing via configurable heating and surfaces. Completed development of test articles and procedures. Continued testing of antimicrobial peptides. Continued effort to characterize polymorphic regions of B. mallei genome using ribotyping, repetitive sequence polymerase chain reaction, and randomly amplified polymorphic DNAs. Initiated effort to assess utility of modified nanowires for bio-detection. Completed effort to assess novel light-scattering method for bio-identification. Completed effort to enhance utility of microfluidic control for bio-detection. Completed initial investigations of bacterial ghosts as simulants for biological warfare agents.

Total 2175

	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	302	0	0

FY 2005 Accomplishments:

- 302 Modeling and Simulation Battlespace Management - Completed efforts in support of modeling agent dispersal after release.

Total 302

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

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

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

PROJECT
CB1

	FY 2005	FY 2006	FY 2007
Protection	1068	0	0

FY 2005 Accomplishments:

- 420 Respiratory Protection - Completed research into understanding physical adsorption processes for Toxic Industrial Chemicals (TICs) and CW agents on novel adsorbent materials. Completed effort to develop performance model for the electric-swing adsorption process.
- 648 Shelter Protection - Completed investigations of the interrelationships between the chemical, physical, and transport properties of novel butyl rubber membranes prepared by electrospinning; expanded this effort to include permeation performance evaluations of related polymeric materials. Completed effort to assess utility of nanoparticle-modified fibers for denaturing CW agents.

Total 1068

	FY 2005	FY 2006	FY 2007
Supporting Science and Technology	1270	0	0

FY 2005 Accomplishments:

- 1270 Chemical Threat Agents - Completed effort to measure ambient volatility of CW agents.

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

DATE **February 2006**

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

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

PROJECT
CB1

FY 2005 Accomplishments (Cont):
Total 1270

	FY 2005	FY 2006	FY 2007
Threat Agent Science	0	15253	16082

FY 2006 Planned Program:

- 3750 Modeling/Simulation Science - Conduct basic research to understand fundamental relationships of atmospheric phenomena, link equations of motion for terrestrial and space environments, investigate relationships between sensor data and dispersion forecasts, and improve the basic understanding of atmospheric turbulence in the stable boundary level.
- 1155 Detection Science - Investigate nano-technologies as sensors and investigate a theory-guided approach to the design of molecular sensing devices and systems.
- 1140 Threat Agent Science - Investigate genetic and biochemical variability as a potential new source of exploitable signatures and characterize the population dynamics of bacterial germination and migration within the body (toxicokinetics) and infection of target tissue under natural and altered physicological states (toxicodynamics).
- 969 Decontamination Science - Investigate 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.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**CB1**

FY 2006 Planned Program (Cont):

- 2470 Special Projects (Nano-technology Initiative) - Survey the $1-Billion federal government's annual investments in nano-technology, develop a knowledge base for nano-technology research relative to chemical-biological defense, and leverage identified nano-science and nano-technologies from sources identified by the survey.
- 5769 Integrated Basic Research - 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.

Total 15253

FY 2007 Planned Program:

- 3775 Modeling/Simulation Science - Continue basic research to understand fundamental relationships of atmospheric phenomena, link equations of motion for terrestrial and space environments, investigate relationships between sensor data and dispersion forecasts, and improve the basic understanding of atmospheric turbulence in the stable boundary level.
- 1180 Detection Science - Continue investigating nano-technologies as sensors and investigate a theory-guided approach to the design of molecular sensing devices and systems.
- 1165 Threat Agent Science - Continue investigating genetic and biochemical variability as a potential new source of exploitable signatures and characterize the population dynamics of bacterial germination and migration within the body (toxicokinetics) and infection of target tissue under natural and altered physicological states (toxicodynamics).

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

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

PROJECT
CB1

FY 2007 Planned Program (Cont):

- 1015 Decontamination Science - 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.
- 2495 Special Projects (Nano-technology Initiative) - Continue to leverage identified nano-science and nano-technologies from sources identified by the survey.
- 6452 Integrated Basic Research - Continue 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.

Total 16082

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	286	0

FY 2006 Planned Program:

- 286 SBIR

Total 286

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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 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104707	134222	103092	95674	91186	84402	80623	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	87033	110219	78236	72496	75429	67855	56786	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869
TT3 TECHBASE TECHNOLOGY TRANSITION	0	11127	11087	7879	8340	8688	8627	Cont	Cont

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	32308	54902	72356	49050	33805	26521	25222	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH): This project funds basic research on the development of vaccines and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. This project also funds basic research employing biotechnology to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project include current science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, and Therapeutics) and directed research efforts. Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Transformational Medical Technology Initiative	0	27205	51416

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2006 Planned Program:

- 27205 Multiagent (Broad Spectrum) Medical Countermeasures - Identify common biomarkers for several broad classes of Pathogenic Agents (e.g. intracellular facultative bacilli, hemorrhagic viruses, pox viruses). Develop a systematic evaluation of pathogen biomarkers for categories of Biological Warfare (BW) Pathogenic Agents that tie to commonality in pathogenic mechanisms(s) of action. Develop collaborations to initiate 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. Determine 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.).

Total 27205

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2007 Planned Program:

- 51416 Multiagent (Broad Spectrum) Medical Countermeasures - This effort is part of the Quadrennial Defense Review (QDR) "leading edge" investment to develop broad spectrum medical countermeasures against future genetically-engineered bio-terror threats, for which there are no current defenses. Continue to identify common biomarkers for several broad classes of Pathogenic Agents (e.g. intracellular facultative bacilli, hemorrhagic viruses, pox viruses). Develop problem solving approach that will focus on four major modules of broad-spectrum effort (pathogen science; host response systems biology; adaptive technology to speed drug approval process; next generation break-through technology). Develop further a systematic evaluation of pathogen biomarkers for categories of Biological Warfare (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 for at least three broad classes of pathogenic mechanisms. 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 (e.g., override of host apoptosis (programmed cell death) pathways, immune down-regulation, signal transduction agonists/antagonists, etc.).

Total 51416

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

DATE **February 2006**

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

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

PROJECT
TB1

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	13142	9709	0

FY 2005 Accomplishments:

- 992 Biodefense Research - Used the Reverse Phase Protein Microarrays (RPPA) technique to discover and characterize the signaling pathways of bio-threat microorganism proteins.
- 5951 Bug-to-Drug - Developed a consortium structure with key industry performers to augment innovative, rapid drug development approaches. Identified a rapid strategy to form Biorosettex.
- 992 National Center for Biodefense - Investigated mechanisms of pathology in disease caused by biological warfare agents and identified effective broad spectrum treatments against major biological threat agents.
- 248 Research to Discover Neutralizing Antibodies to Mycotoxin - Generated monoclonal antibodies for the treatment of aflatoxin exposure targeting the respiratory and gastrointestinal system.
- 1984 Therapeutic Approaches to Anthrax and Ricin Toxins - Designed antisense oligomers to block transcription and translation of critical proteins involved in the pathogenesis of biowarfare pathogens such as bacterial (anthrax), viral or toxin (ricin) threats; demonstrate utility in either cell culture (in vitro) systems or small mammal animal models.
- 2975 Therapeutic Phosphorodiamidate Morphilino Oligomers (PMO) - Conducted animal studies to demonstrate proof of principle of patented technology for antisense molecule protection against viral pathogens.

Total 13142

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

DATE **February 2006**

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

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

PROJECT
TB1

FY 2006 Planned Program:

- 2773 Biomarker Molecular Toxicology Initiative.
- 991 Monoclonal Antibody Manufacturing for the Treatment of Emerging Infections.
- 991 Northeast Biodefense Center.
- 991 Selective Biological Center.
- 1981 Ricin & Anthrax Countermeasures.
- 991 Vaccine Development Program.
- 991 DNA Safeguard Project at Boise State University.

Total 9709

	FY 2005	FY 2006	FY 2007
Diagnostics	3704	5129	4518

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2005 Accomplishments:

- 3704 Diagnostic Technologies - Designed new nucleic acid and immunoassays specific for different bacterial and viral targets in order to enhance current detection capabilities. Assessed novel methods to develop immunodiagnostic assays. Initiated study to identify biomarkers of immunity in individuals vaccinated against biological warfare agents. Evaluated new chemistries for the identification of biological warfare agents. Identified host biomarkers of early infection resulting from exposure to biological agents. Evaluated the utility of novel technologies such as nucleic acid microarrays for biological agent detection.

Total 3704

FY 2006 Planned Program:

- 5129 Diagnostic Technologies - Improve the sensitivity and specificity of existing nucleic acid and immunodiagnostic assays. Design new nucleic acid and immunodiagnositic assays to augment pathogen detection as new genomic data and cutting edge techniques become available. Simplify DNA and RNA (Ribonucleic Acid) extraction methods for field use. Continue study to identify biomarkers of immunity in individuals vaccinated against biological warfare agents. Pursue new chemistries for the identification of biological warfare agents. Verify host response markers correlating with early recognition of infections caused by selected biological warfare agents.

Total 5129

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

DATE **February 2006**

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

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

PROJECT
TB1

FY 2007 Planned Program:

- 4518 Diagnostic Technologies - 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.

Total 4518

	FY 2005	FY 2006	FY 2007
Pretreatments	6624	7300	9437

FY 2005 Accomplishments:

- 1200 Multiagent Vaccines - Identified bacterial multiagent vaccine target antigens. Cloned and expressed chimeric vaccine constructs for multivalent toxin and bacterial vaccines by protein engineering. Initiated effort on anthrax-plague combined vaccine development. Established new animal efficacy models. Explored genomics/proteomics-based high throughput approaches for identifying potential vaccine target antigens. Explored use of Virus-Like Particles (VLP) for multiagent vaccine development. Evaluated DNA-based immunization against viral and bacterial threat agents.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2005 Accomplishments (Cont):

- 4624 Vaccine Research Support - Initiated project to develop a generic Bacillus vaccine, including identification of target antigens. Facilitated and consolidated research efforts in Brucella/Burkeholderia/Tularemia to include identification of potential intracellular pathogen target antigens. Characterized novel virulence genes and gene products of selected bacterial threat agents to support discovery of new medical countermeasures. Identified new Staphylococcal Enterotoxin A/Staphylococcal Enterotoxin B (SEA/SEB) structural determinants as potential immunogens to protect against multiple SE serotypes. Began investigating the role of cytotoxic T cells in the higher animal model of filovirus infection. Expanded development of animal models of aerosol infection with filoviruses. Determined the use of viral-like particles (VLP) and adenoviruses as antigen delivery platforms for vaccines against filoviruses.
- 800 Vaccine Technology Development - Used high throughput gene expression and sequencing technologies for a genomics/proteomics-based approach toward rapid vaccine development. Began studies in anthrax/plague molecular vaccine development and evaluation. Initiated Bacillus generic molecular vaccine construction.

Total 6624

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2006 Planned Program:

- 1311 Multiagent Vaccines - (Formerly under Animal Models and Resuscitative Intervention) Continue to investigate the development of a trivalent anthrax-plague vaccine, to include a third component. Evaluate specific combinations of target antigens and vaccine platforms, such as adenovirus delivery vectors, for vaccine development. Continue to explore genomics/proteomics-based high throughput approaches to identify potential vaccine target antigens. Continue to evaluate the use of virus-like particles (VLP) to induce an immune response against targeted antigens and characterize the nature of the response. Continue evaluation of DNA-based immunization platforms. Explore the use of novel approaches including recombinant protein and/or fusion protein constructs.
- 4489 Vaccine Research Support - Continue development and construction of initial generic Bacillus vaccine candidates and begin initial immunogenicity studies. Identify and evaluate new target antigens for intracellular pathogens. Evaluate the role of cytotoxic T-cell immune response in higher animal models against filovirus infection. Continue basic studies in anthrax and plague pathogenic mechanisms. Continue development of alternative delivery platform strategies for immunization. Continue the development of recombinant vaccine candidates for botulinum neurotoxins. Evaluate various platforms for compatibility with the V3526 (VEE) vaccine candidate. Analyze Western and Eastern Equine Encephalitis (WEE/EEE) mutants with various engineered attenuating mutations. Evaluate additional target antigens for Ebola virus vaccine development. Continue to evaluate adenovirus-based immunization approaches for vaccination against filoviruses.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2006 Planned Program (Cont):

- 1500 Vaccine Technology Development - Improve DNA-based immunization platforms against multiagent targets that stimulate protective immunity following minimal dosing. Evaluate high throughput gene expression systems for immune responses against selected bio-threat agents including Bacillus spore antigens and tularemia. Explore alternate immunization platforms for efficacy against selected biothreat agent pathogens. Evaluate bioinformatics-based approach to identify common Bacillus-specific spore target antigens. Evaluate the application of Toll-Like Receptors (TLR) agonists in vaccine construction and enhancement. Explore the use of human genome sequence analysis to determine genetics of host response to vaccination. Explore aspects of the innate immune response with respect to vaccine enhancement strategies.

Total 7300

FY 2007 Planned Program:

- 1760 Multiagent Vaccines - Evaluate trivalent vaccine formulations using anthrax/plaque and the third component such as ricin or staphylococcal enterotoxin A/B, as well as other possible components. Identify additional valid target antigens for different bio-threat pathogens and the use of genetic engineering approaches to construct unique gene fusions encoding multi-epitope protein antigens to optimize multiagent vaccine delivery systems. Expand effort in multiagent vaccine development to include the evaluation of novel immunization platforms and therapeutic immunization strategies for post-exposure treatment. Continue to develop the use of Virus-Like Particles (VLP) for multiagent vaccine development. Continue to evaluate DNA-based immunization strategies against bio-threat agents.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2007 Planned Program (Cont):

- 5677 Vaccine Research Support - Proceed with generic Bacillus vaccine construction/evaluation. Establish broad spectrum vaccine strategy to target the four major facultative intracellular bacterial threats using genetic immunization and/or phagosome-lysosome based approaches. Continue evaluation of gene expression technologies for in vitro (inside a test tube) analysis of host responses to bacterial pathogens. Continue the comparative analysis of information in the genomics/bioinformatics database for the design of unique target antigens. Continue basic pathogenicity studies of selected biothreat agents. Evaluate next-generation SEA/SEB immunogens as vaccine candidates to protect against multiple SE serotypes in vivo (inside the organism). Develop and refine in vitro correlates of immunity for new antigens. Continue B and T cell epitope mapping of lead antigen candidates. Evaluate filovirus cellular immunity parameters. Develop animal models for Ebola/Sudan strain of virus infections.
- 2000 Vaccine Technology Development - Evaluate generic Bacillus molecular vaccine in animal studies. Explore 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. Continue evaluation of gene expression technologies for in vitro analysis of host responses to bacterial pathogens. Comparison of genomics/bioinformatics database information analysis for the design of unique target antigens. Design studies to evaluate cell-mediated immune targeting of antigens for intracellular pathogens. Evaluate the genetic basis of the human immune response to immunization through genomic analysis. Evaluate the T-cell response against selected target antigens (analysis of cell-mediated immune response). Assess human immunodominant epitopes of selected bio-threat target antigens.

Total 9437

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

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

PROJECT
TB1

	FY 2005	FY 2006	FY 2007
Therapeutics	8838	5031	6985

FY 2005 Accomplishments:

- 1243 Therapeutics, Bacterial - Evaluated efficacy of selected licensed and investigational products for efficacy in mice against bacterial threat agents. Maintained surveillance of new products in the U.S. so that these products can be evaluated for efficacy in vitro and in vivo. Initiated efficacy studies of Investigational New Drug (IND) antibiotics for inhalational anthrax in non-human primates (NHPs). Evaluated Heat Shock Proteins (HSPs) with candidate vaccines. Evaluated immunoglobulin therapies for bacterial threat agents.
- 5110 Therapeutics, Toxin - Assessed structural analogs of lead therapeutic compounds using high-throughput screening assays for toxins. Refined X-ray data for toxin-inhibitor co-crystal structures of most promising botulinum neurotoxin inhibitors. Initiated modeling time course of inhibitor effects. Performed computational chemistry studies to refine lead compound co-crystal structures. Tested FDA-approved drugs for septic shock as adjunct Staphylococcal Enterotoxin (SE) therapeutics in vivo. Continued development of lead monoclonal antibody systems against toxins as passive immunotherapeutics in vivo. Performed testing of lead compounds using cell-based model systems for assessment of therapeutic efficacy.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2005 Accomplishments (Cont):

- 2485 Therapeutics, Viral - Developed high throughput in vitro drug screening assays for lethal human pathogenic viruses. Identified several lead small molecule therapeutics which protected animals against Ebola and Marburg lethal infections. Found that virus-like particles of Ebola activated the innate immune responses through natural killer cells and elicited protection against lethal Ebola challenge. Developed assays by identification of a suitable therapeutic target, cloning, expression and characterization of the therapeutic target proteins. Developed quantitative assays for variola and other orthopox viruses using dried-down chemistry to detect and discriminate the variola virus from other orthopox viruses simultaneously (in the same reaction tube). Developed heterologous virus like particles (VLPs) containing viral proteins GP and VP40 from Ebola and Marburg for testing them as therapeutic agents for treating filovirus infections in murine and guinea pig model systems.

Total 8838

FY 2006 Planned Program:

- 1277 Therapeutics, Bacterial - Evaluate if cellular immune response against the F1-V fusion protein of plague can be screened for potential therapeutics approaches, particularly through cytokine mediated pathways or expression of heat shock proteins.
- 2454 Therapeutics, Toxin - Define and validate essential indicators of therapeutic efficacy against selected toxins; establish conceptual framework for protocol screening for therapeutic candidates that demonstrate threshold efficacy; define and develop the key linking technologies (peptide binding design, candidate delivery systems) that have relevance to eventual human clinical efficacy trials for toxins.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TB1**

FY 2006 Planned Program (Cont):

- 1300 Therapeutics, Viral - Perform drug discovery assays to identify and test leading antivirals with in vitro assays, small animal models, and authentic threat agents. Validate potential mediators of shock or toxemia and determine the basis for the treatment of shock or toxemia in appropriate animal models. Evaluate the utility of combining approaches that target different aspects of viral replication and/or disease pathogenesis. Standardize leading antivirals in appropriate animal models. Continue to develop a strategic plan for licensure and manufacturing with lead compounds.

Total 5031

FY 2007 Planned Program:

- 491 Therapeutics, Bacterial - Begin evaluation of therapeutic strategies for naturally occurring antibiotic-resistant strains of anthrax, plague, and other validated threat agents. Finalize studies of non-specific immune response factors (CpG, heat-shock proteins, etc.) as an adjunct to plague therapy.
- 4894 Therapeutics, Toxin - Refine planned therapeutic animal models, to conclude development 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.

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DATE **February 2006**

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

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

PROJECT
TB1

FY 2007 Planned Program (Cont):

- 1600 Therapeutics, Viral - Continue drug discovery to identify and test antivirals. Test leading antivirals in appropriate, existing animal models and worst-case scenarios such as viral challenge dose, route, and variation in viral challenge strain. Optimize key dosing, administration, and pharmacological characteristics of leading antivirals in non human primate models. Establish threshold therapeutic effects for candidate viral therapeutics, as to various parameters such as dose, route, and area under the curve. Investigate and develop additional resuscitative technologies that integrate established and emerging viral therapeutic modalities into suitable candidate therapies in humans.

Total 6985

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	528	0

FY 2006 Planned Program:

- 528 SBIR

Total 528

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

DATE
February 2006

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

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

PROJECT
TB1

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	42987	88779	145073	76474	54837	43864	41114	Cont	Cont
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	67899	88830	96736	143039	200722	229218	131723	Cont	Cont

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	8980	10656	10744	12969	12886	13538	12938	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 mechanisms and 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). Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Diagnostics	362	298	301

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TC1**

FY 2005 Accomplishments:

- 362 Diagnostic Technologies - Conducted basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure. Performed study examining the potential for detecting sulfur mustard exposure by cleavage of adducts formed with blood proteins. Initiated assessment of a non-invasive immunodiagnostic test detecting sulfur mustard skin exposure before the onset of vesication. Performed initial assessment of gas chromatography mass spectrometry (GC-MS)/solid phase micro-extraction as a simple and quick clinical screen to verify exposure to Chemical Warfare Agent (CWA).

Total 362

FY 2006 Planned Program:

- 298 Diagnostic Technologies - Continue basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure. Report on the potential for detecting sulfur mustard exposure by cleavage adducts formed with blood proteins.

Total 298

FY 2007 Planned Program:

- 301 Diagnostic Technologies - Accelerate basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure.

Total 301

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DATE **February 2006**

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

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

PROJECT
TC1

	FY 2005	FY 2006	FY 2007
Emerging Threats	2283	2071	0

FY 2005 Accomplishments:

- 966 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Examined multiple biomarkers as confirmatory for low level chemical exposure. Studied possible immunological deficit following low level chemical nerve agent exposure. Examined physiological parameters that may alter sensitivity to low level CW agents.
- 1317 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Compared the direct effects of NTA on smooth muscle, hematic constituents, and lung to determine role in toxicity. Continued to identify changes in the global gene expression profile of cultured human epidermal keratinocytes (HEK) exposed to NTAs using DNA microarrays and genomic techniques to aid in considering strategies leading to medical countermeasures.

Total 2283

FY 2006 Planned Program:

- 531 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Complete studies of medical countermeasures that minimize the effects of low level chemical exposure. Determine the effects of repeated exposure to chemical agents on Central Nervous System gene and protein expression in rodents.
- 1540 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Study the oxidative metabolism of non-traditional convulsive agents. Study the pathophysiology of more classes of NTAs.

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DATE **February 2006**

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

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

PROJECT
TC1

FY 2006 Planned Program (Cont):
Total 2071

	FY 2005	FY 2006	FY 2007
Therapeutics	6335	8183	10443

FY 2005 Accomplishments:

- 821 Nerve Agent Defense, Neuroprotection - Identified and tested various potential neuroprotectant agents in both rat and guinea pig nerve agent seizure models.
- 3582 Vesicant Agent Defense, Vesicant Medical Countermeasures - Characterized pathophysiological endpoints. Continued elucidation of pathophysiological schema. Identified points in schema for potential pharmaceutical intervention.
- 1932 Chemical Warfare Agent Defense, Inhalation Therapeutics - Identified and solicited for scientifically plausible animal and non-animal exposure models to investigate mechanisms of toxicity on pulmonary related function and to establish in-house and collaborative research programs within the confines of the approach.

Total 6335

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TC1**

FY 2006 Planned Program:

- 2200 Nerve Agent Defense, Neuroprotection - Investigate novel pharmacologic measures to protect against organophosphate injury, using animal neurobehavioral, physiological, and neuroanatomic measures. Characterize the mechanism of protection seen with successful candidates, develop additional resuscitative technologies into suitable candidate therapies in humans.
- 3859 Vesicant Agent Defense, Vesicant Medical Countermeasures - Continue to explore pharmacological strategies of vesicant pretreatments and therapeutics, to include percutaneous, ocular, and pulmonary exposures. Analyze in vitro effects of sulfur mustard agent (HD) on cellular energy metabolism, and apoptotic (cell death) pathways. Continue to study in vitro biochemical changes induced by HD.
- 2124 Chemical Warfare Agent Defense, Inhalation Therapeutics - Establish 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. Investigate and develop additional resuscitative technologies that integrate established and emerging toxicant therapeutic modalities into suitable candidate therapies in humans.

Total 8183

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

DATE **February 2006**

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

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

PROJECT
TC1

FY 2007 Planned Program:

- 2322 Therapeutics, Neurologic - Develop neuroprotectants, anticonvulsants, and broad spectrum reactivators to reduce or prevent injury from nerve agents using molecular modeling as well as in vitro/in vivo laboratory techniques. Continue studies of known mechanisms of cell death and molecular interventions. Develop strategies for medical intervention to prevent seizures, minimize related neuronal injury in animal models, screen and adapt existing compounds/approaches to nerve agent protection strategies.
- 4265 Therapeutics, Cutaneous and Ocular - Develop animal models for percutaneous, ocular and pulmonary exposure. Complete efforts to develop in vitro tissue assays for potential therapeutic compounds, design screening protocols to down-select these candidate compounds.
- 2149 Therapeutics, Respiratory and Systemic - Investigate and develop additional resuscitative technologies that address both the direct pulmonary injury and systemic effects of chemical warfare agents, focus on identifying common sites for therapy at the tissue, cellular, and sub-cellular levels of injury.
- 1707 Therapeutics, Medical Toxicology - NTAs and Other Agents - Exploratory and comparative studies of emerging non-traditional chemical nerve agents. Focus on structure, function, and mechanism of action.

Total 10443

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	104	0

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

DATE **February 2006**

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

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

PROJECT
TC1

FY 2006 Planned Program:

- 104 SBIR

Total 104

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	24426	23657	30682	38927	41418	40598	39136	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	12125	23863	18893	31812	31656	32621	33785	Cont	Cont

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BUDGET ACTIVITY 2
APPLIED RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

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

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

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	172120	246953	280422	214036	191991	173790	166261	Continuing	Continuing
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104707	134222	103092	95674	91186	84402	80623	Continuing	Continuing
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	42987	88779	145073	76474	54837	43864	41114	Continuing	Continuing
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	24426	23657	30682	38927	41418	40598	39136	Continuing	Continuing
TR2	MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)	0	295	1575	2961	4550	4926	5388	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

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

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

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 2006**

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

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

B. Program Change Summary:		**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		168827	187787	179914
Current Biennial Budget Estimate (FY 2007)		172120	246953	280422
Total Adjustments		3293	59166	100508
a. Congressional General Reductions		-131	-3604	0
b. Congressional Increases		0	62770	0
c. Reprogrammings		4806	0	0
d. SBIR/STTR Transfer		-1382	0	0
e. Other Adjustments		0	-25	100508

Change Summary Explanation:

Funding: FY06 - Congressional increases to enhance projects within the science and technology base (+$31,920K CB2; +$30,850K TB2). Congressional general reductions and other adjustments (-$2,015K CB2; -$1,175K TB2; -$409K TC2; -$5K TR2).

FY07 - Increase to enhance Medical Biological research efforts in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (+$101,900K TB2). Defense-wide directed offsets (-$3,086K CB2; -$1,249K TB2; -$918K TC2; -$47K TR2). Inflation adjustment (+$1,437K CB2; +$2,021K TB2; +$428K TC2; +$22K TR2).

Schedule: N/A

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RDT&E DEFENSE-WIDE/
BA2 - Applied Research

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

Technical: N/A

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DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104707	134222	103092	95674	91186	84402	80623	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-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 operation 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. Research in this PE also supports the Joint Requirements Office (JRO) for CB Defense Baseline Capability Assessment.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	43297	31617	0

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments:

- 992 Agent Detection and Neutralization System (AFSOC) - Evaluated the capability of DNA Capture Elements (DCEs) provided by Conceptual MindWorks, Inc. as biological warfare agent sensor(s) for live anthrax spores, as well as other existing antibody-based sensors, to perform under battlefield conditions and determine the sensitivity, responsiveness and robustness of these biological sensors.
- 2479 CBRN Countermeasures - Conducted research that focuses on human exposures to bacterial/viral/toxin agents, chemical warfare agents, toxic industrial chemicals, or radioisotopes from aerosol releases associated with terrorist incidents in urban and near-urban environments. Concentrated efforts that expand the knowledge, tools, models, and strategies necessary to protect against WMD. Conducted laboratory studies of cell type-specific, cytotoxic effects and mechanism of lethality for biomedical applications; conducted dispersion modeling, exposure estimation, and risk assessment of aerosol releases for in-door and ambient environments for threat characterization; developed model emergency medical systems for responsiveness to terrorist incidents as part of consequence management; and assessed social psychological/psychiatric dimensions of behavioral dynamics to prevent or respond to terrorism.
- 2157 Chemical Agent Persistence Models - Conducted Independent Verification and Validation (IV&V) of CB models, simulations, and battlespace management tools for environmental fate of agents, Chemical Hazard Estimation Risk Assessment Tool (CHEMRAT) version 1.5 and other models as applicable to chemical-biological defense.
- 992 IMS Sample Concentration and Bioagent Detection - Developed a front-end to allow the sample collection and process to increase the performance of existing detection technologies.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 992 Integrated Biodefense Research - Developed technologies for rapid response to airborne biological and chemical agents in battlefield and key urban environments. Developed new methods for the production of nanometer - and micrometer-sized crystals of organic materials.
- 1488 Low-cost Automated Gas Chromatograph/Flame Photometric Detector System - Developed an inexpensive chemical agent detector based on gas chromatograph and atomic emission spectroscopy from chemical agents.
- 1488 Systems for Sampling and Detecting Bioaerosols - Developed a low cost, front-end for sample collection and processing of biological materials for the next generation of light weight biological detectors.
- 992 Agent Fate Program - Conducted Verification and Validation (V&V) task for modeling work in DTO CB42, Environmental Fate of Agents.
- 992 Air Contamination Monitoring System - South Coast Air Quality Management District (SCAQMD) - Developed and validated concepts of operation for the protection of high value/visible domestic facilities, i.e. sports arena. Provided sufficient equipment to support and demonstrate the concepts of operation.
- 1488 Biological-Chemical Vaporous Hydrogen Peroxide Decontamination for Military Aircraft and Equipment - Validated the adaptation of biological-chemical vaporous hydrogen peroxide in performing fast and effective decontamination of military aircraft.

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DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 3719 Chemical-Biological Protective Suit Membrane Research - Continued optimization of membrane materials to increase moisture vapor transport and durability and to reduce chemical warfare agent permeation. Fabricated optimized membrane into candidate fabric systems for further evaluation. Conducted laboratory evaluations of candidate fabric systems.
- 3471 Chemical Imaging for Food and Water Safety - Developed an imaging capability based on Raman spectroscopy to detect biological contaminants in food and water.
- 992 Early Warning and Detection Program - Developed new point sensors based on surface enhanced Raman using semi-metallic oxide materials to detect the biological materials.
- 1289 Future Force Warrior-Nano Wire Mesh Fabrics for Chemical-Biological Agent Defense - Fabricated barrier materials employing wire mesh technology and assessed their efficacy against chemical warfare agent simulants. Down-selected best candidate material configurations and optimized to improve protective barrier characteristics. Conducted assessment of optimized materials against simulants and chemical warfare agents.
- 3719 Low Cost Chemical-Biological Protective Shelter Development - 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 most promising technologies and initiated evaluation of those technologies for target applications.
- 4166 Love Shear Horizontal Surface Acoustic Wave (LSH-SAW) Hand-held Biosensor - Developed a light-weight handheld biological sensor based on the use of antibodies supported on quartz resonators.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 992 Remote Optical Sensing Program - Developed new optical components base on semi-metallic oxide materials to replace conventional mechanical components currently used in detector systems.
- 992 Research on a Molecular Approach to Hazardous Materials Decontamination - Conducted research into the use of multi-phase systems for decontamination. Evaluated the combinations of agent/surfactant/water and agent/solid/surfactant/water.
- 1190 Technology for the Protection of Air and Water Systems - Developed technology to detect the presence of chemical and biological contaminants in water.
- 1984 Zumwalt Program for Countermeasures to Biological and Chemical Threats - Developed new models and sensor systems for the detection and identification of chemical and biological hazardous materials.
- 1984 Real-Time Non-Specific Viral Agent Detection - Developed and published the operating protocols for at least four non-enveloped viruses from naturally occurring sources using the VDSC-1 virus detection technology.
- 2681 Chemical Biological Defense Program Initiative Fund.
- 2058 Conducted independent audit of CBDP financial statements. Conducted studies and analysis of the Guardian Installation Protection Program capabilities and options. Performed program reviews/assessments including congressional issue analysis.

Total 43297

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program:

- 1040 Chem-Bio Disinfection/Neutralization Effort.
- 991 Immuno-Array.
- 991 IMS Sample Concentration and Bioagent Detection.
- 3466 Low-Cost Protective Chem-Bio Shelters - Conduct 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-select candidates to most promising technologies and initiate evaluation of those technologies for target applications.
- 991 Omni Spray Development of Desportion Electro-Spray Ionization (DESI).
- 1040 Quantum Fingerprint Technology for Chem-Bio Sensing.
- 991 Warfare Agents Program.
- 991 Real-Time Non-Specific Viral Agent Detector.
- 2842 Self Decontaminating Polymer System for Chemical and Biological Warfare Agents.
- 496 Theater Level Modeling of Chemical and Biological Operational Effects at the Level of Individual Soldier.
- 991 Vulnerability Determination for Air Vehicle Contamination.
- 1387 Zumwalt Program for Countermeasures to Biological and Chemical Threats - Continue Development of new models and sensor systems for the detection and identification of chemical and biological hazardous materials.
- 1387 Portable CB Detection Sensor System.

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DATE **February 2006**

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

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

PROJECT
CB2

FY 2006 Planned Program (Cont):

- 1585 Nanotechnology for Detection of BW Agents.
- 2476 Advanced Emergency Medical Response Training Program.
- 1585 Nanowire Mesh Fabrics for Chem/Bio Defense - Fabricate barrier materials employing wire mesh technology and assess their efficacy against chemical warfare agent simulants. Down-select best candidate material configurations and optimize to improve protective barrier characteristics. Conduct assessment of optimized materials against simulants and chemical warfare agents.
- 991 Research on Molecular Approach to Hazardous Materials Decontamination - Continue research into the use of multi-phase systems for decontamination. Evaluate the combinations of agent/surfactant/water and agent/solid/surfactant/water.
- 446 System for Bacterial Warfare Agent Detection.
- 6930 Chemical Biological Defense Program Initiative Fund.

Total 31617

	FY 2005	FY 2006	FY 2007
Decontamination	3932	6703	6006

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments:

- 1714 Solution Chemistry BCA#17/18/23 - Concluded studies on activated sorbent suspensions in hydrofluoro ethers (HFE) solvent systems. Initiated a new effort to develop reactive impregnated solvent-based wiping systems. Initiated a new effort to develop a better filtration system for HFE solvent systems as a product improvement for the Joint Service Sensitive Equipment Decontamination (JSSED) acquisition effort. Continued research on electrochemical development of chlorine dioxide to develop a man-portable decontamination system to support Joint Portable Decontamination System (JPDS).
- 2218 Solution Chemistry - Oxidative Formulation (DTO CB44) BCA#18/23/34 - Completed chamber testing over operational temperature range, finished material compatibility testing, and formulated new oxidative approaches into a dry powder and/or concentrated liquid. This DTO supported the Joint Transportable Decontamination Systems (JSTDS) and JPDS requirements. Completed DTO in FY05.

Total 3932

FY 2006 Planned Program:

- 1115 Process Fundamentals BCA#17/18/23/34 - Initiate new research efforts to develop an aerosol-based decontamination application and determine the efficacy effects using highly effective aerosolized activated hydrogen peroxide. Continue 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.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 3034 Solution Chemistry BCA#17/18/23 - Conclude development of a chlorine dioxide based man-portable decontamination system and investigate alternative solution based technologies for developing chlorine dioxide to support JPDS; continue efforts to develop reactive impregnated solvent-based wiping system capable of decontaminating vehicle interiors and sensitive equipment to support JSSED and Joint Platform Interior Decontamination (JPID); initiate new review of technologies for point-of-use generation of hydrogen peroxide for use in a variety of decontamination applications to support JSTDS.
- 375 Solid Phase - Continue to develop porous polymer solvent cartridges for removing CW agents from fluorinated solvents used in sensitive equipment decontamination as a JSSED incremental improvement.
- 2179 Alternative Process BCA#17/18/23/24/39 - Initiate new research to develop a gaseous chemical and biological decontamination system combined hot air and modified vaporous hydrogen peroxide and determine efficacy effects on decontamination of chemical and biological agents and transition to BA3 to support JSTDS, JPID, and JSSED; and initiate new studies to determine technical potential of reactive coatings to enhance decontamination efficacy.

Total 6703

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DATE **February 2006**

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

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

PROJECT
CB2

FY 2007 Planned Program:

- 1100 Process Fundamentals BCA#17/18/23/34 - Complete research efforts to develop an aerosol-based decontamination application and determine the efficacy effects using highly effective aerosolized activated hydrogen peroxide.
- 2257 Solution Chemistry BCA#17/18/23/34 - Complete development of reactive impregnated solvent-based wiping system and transition to Joint Platform Interior Decontamination (JPID); initiate new research on technologies to develop hydrogen peroxide at their point-of-use; and continue efforts/initiate new research to develop an improved decontamination solution that is reactive, non-corrosive, environmentally benign, and effective on a multitude of surfaces.
- 1264 Solid Phase BCA#17/18/34 - Complete development of an improved filtration system for hydrofluoro ethers solvent cleaning systems and transition to the Joint Service Sensitive Equipment Decontamination System (JSSED) program as a product improvement; and continue efforts/initiate new research to develop reactive sorbent decontaminants with an added focus on nano-based technologies.
- 1385 Alternative Process BCA#17/18/34/39 - Continue efforts/initiate new research to demonstrate decontamination processes using gas, kinetic, energetic, and/or novel approaches to develop new decontaminants and decontamination processes; and continue studies to determine technical potential of reactive coatings to enhance decontamination efficacy.

Total 6006

	FY 2005	FY 2006	FY 2007
Detection	12673	21831	23025

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments:

- 5104 Stand-off Biological Aerosol Detection (DTO CB35) BCA#1 - Evaluated breadboards in field environments to detect and discriminate (biological vs. non-biological) biological and chemical agents at concentration of 1,000 agent containing particles per liter of air (ACPLA) at a range of 1 km. Conducted feasibility studies to enhance false alarm to one per week and to operate during daytime. This DTO supports the Joint Biological Stand-off Detection Systems (JBSDS).
- 2000 Wide Area Aerial Reconnaissance for Chemical Agents (DTO CB53) BCA#28 - Developed a 3-Hz, 128 x 128 tunable Adaptive Infrared Imaging Spectroradiometer (AIRIS). Performed sensor characterization tests. Developed off-line algorithms and signal processing techniques. This DTO supports the Joint Service Light Nuclear Biological Chemical Reconnaissance System (JSLNBCRS) and Stryker programs.
- 5569 Point Detection, Integrated CB BCA#28 - Continued development of first generation breadboard based on millimeter wave spectroscopy for bio detection. Initiated Raman spectroscopy for the detection/identification of biological materials. Expanded effort from Lightweight Integrated CB Detection (DTO CB50) on aerosol properties for identification of chemicals.

Total 12673

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DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program:

- 4700 Stand-off Biological Aerosol Detection (DTO CB35) BCA#1 - Demonstrate 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. Evaluate the feasibility of the demonstrated technology to also meet the chemical stand-off detection requirements. This DTO completes in FY06 and supports the Joint Biological Stand-off Detection Systems (JBSDS).
- 4000 Wide-Area Aerial Reconnaissance for Chemical Agents (DTO CB53) BCA#28 - Determine optimum spectrometer performance specifications in terms of scan speed, spatial resolution, and spectral resolution. Demonstrate an enhanced Fourier Transform Infrared (FTIR) and tunable IR systems with real-time data processing on an airborne platform in a reconnaissance application using the appropriate performance parameters. Complete DTO. This DTO supports the Joint Service Light Nuclear Biological Chemical Reconnaissance System (JSLNBCRS) and Stryker vehicle programs.
- 5101 Point Detection, Integrated CB BCA#28 - Continue first generation breadboard based on millimeter wave spectroscopy for bio detection. Continue Raman spectroscopy for the detection/identification of biological materials. Initiate investigations in solid state visible and UV receivers to replace photomultiplier tube for improved size, weight, power, reliability, and cost. Initiate microelectronic machine sized solid state FTIR point sensor system.
- 2100 Detection of CB Contamination on Surfaces BCA#31/33 - Initiate the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 2431 Point Detection, Biological Identification BCA#21 - Leverage efforts from Medical Science and Technology programs in proteomics for biomarkers for the identification of biological agents in complex biological backgrounds.
- 3499 Biological and Chemical Stand-off Technology BCA#1/7 - Initiate the development of models to predict passive standoff technology responses to aerosols. Initiate detection modalities to detect sentinel species from biological chemical warfare materials and processes. Initiate studies to investigate the optimal performance parameters for hyperspectral technology to detect biological materials. Initiate studies to optimize/convert detection algorithms to imaging technology.

Total 21831

FY 2007 Planned Program:

- 6755 Point Detection, Integrated CB BCA#28 - Complete and demonstrate first generation breadboard based on millimeter wave spectroscopy for bio detection. Evaluate the millimeter wave breadboard to determine the availability of biological signatures. Complete Raman spectroscopy for the detection/identification of biological materials.
- 4000 Detection of CB Contamination on Surfaces BCA#31/33 - Continue the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application.
- 4000 Biological Identification BCA#21 - Continue the development of proteomics to identify biomarkers for the identification of biological agents in complex biological backgrounds.

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DATE **February 2006**

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

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

PROJECT
CB2

FY 2007 Planned Program (Cont):

- 5000 Chemical Point Detection BCA#20/33 - Continue the development of a micro gas analyzer with technology from DARPA. 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).
- 3270 Biological and Chemical Stand-off Technology BCA#1/7 - 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. Initiate studies to optimize/convert detection algorithms to imaging technology.

Total 23025

	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	8263	30257	26328

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments:

- 1154 Chemical and Biological Hazard Environment Prediction (DTO CB55) and Hazard Prediction with Nowcasting (DTO CB62) - Continued refinement of MESO code for transition to Joint Effects Model (JEM). Performed independent validation and verification of a computation fluid dynamics - based tools set. Continued DTO CB62 to enhance near-surface environmental characterization and demonstrate improvements using the Joint Effects Model (JEM).
- 2795 CBDP Decision Capability (formerly Simulation Based Acquisition) - Completed tool design and began prototype construction and testing. Consolidated analytic library and analysis methodology for use by program for rapid decision making. Used iterative user-focused design techniques to enhance tool/capability usability and acceptance.
- 1950 Battlespace Management - Continued efforts to optimize data fusion and decision-making across networks and to provide visualization of network sensor responses within the current and planned Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture frame work. Integrated existing models into the Global Information Grid (GIG) and Net-Centric Enterprise System (NCES).
- 2364 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Tested and transitioned to Joint Operational Effects Federation (JOEF) transition. Developed mobile forces module. Conducted internal Verification and Validation (V&V). Completed DTO.

Total 8263

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program:

- 9215 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA#5/6/8/9 - Identify new applications for the Joint Operational Effects Federation (JOEF). Implement Mission-Oriented Protective Posture (MOPP) capabilities and integrate the biological agent toxicity model into the military worth assessment toolkit. Begin development of an operational impact assessment tool. Start and complete the requirements generation for the linkage of the Simulated Training and Analysis for Fixed Facilities/Sites (STAFFS) and CONTAM models. Begin model design and development of Chemical-Improvised Explosive Device (C-IED) effects model. Conduct a side-by-side comparison of mobile force models for inclusion in JOEF. Improve CBR operational effects modeling tools and methods by working with various agencies/labs to identify capabilities and areas for follow-on research/development. Begin development activities for the integration of JOEF components with theater-level models such as the Joint Integrated Contingency Model (JICM).
- 7300 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA#3/5/6/8 - Complete DTO CB55. Continue high altitude intercept effects characterization by understanding and modeling key physics for single drops. Continue littoral and maritime effects model for JEM by constructing and testing a coastal tracer release system. Conduct study of computation modeling for urban flows. Conduct study of NTA transport and dispersion module requirements for JEM. Conduct verification, validation and documentation of the knowledge based approach for intelligent sensor control and networking. Adapt and integrate existing cellular automata models into a Geographic Information System (GIS) tool for hazard assessment. Validate FAST3D-CT model with wind tunnel data.

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DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 2400 Sensor Data Fusion - Hazard Prediction with Nowcasting (DTO CB62) BCA#5/6 - Enhance near-surface environmental characterization and demonstrate improvements using the Joint Effects Model (JEM). Consolidate source term determination module development. Assess and select appropriate methods for integrating near real-time weather data into transport and dispersion models. Enhance interface between JEM and mesoscale model. Deliver report on complex environments and algorithm refinement. Demonstrate CB source determination module. Validate and complete documentation. Further develop the preferred method for using specific data from chemical and biological sensors to determine hazard source. Develop and test the SCIPUFF Adjoint Model using ideal observational data.
- 6850 Battlespace Management BCA#2/3/4/8/9 - Design Net-Centric Enterprise Systems (NCES) modules for migration to test environment. Develop 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. Conduct study of user interface requirement for future indications and warning for CBRN hazards in both deployed force and homeland defense scenarios. Develop integration strategy to link consequence management capability into Joint Warning and Reporting Network (JWARN). Begin development of appropriate bridging capability to extend JWARN capabilities to homeland defense architectures. Begin development of a modeling/exercise rehearsal capability for JWARN. Field test intelligent agent decision. Provide an integrated demonstration and user access for the Shared Common Operating Picture (COP). Conduct live real-time demonstration of JWARN Compliant Interface Device (JCID) compliant thin server on examples of fielded JWARN sensors. Continue work on web services, NCES and GIG integration for common CBRN software services. Demonstrate inter-LAN socket connection manager in a simulated network environment.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 4492 CBDP Decision Capability BCA#1-39 - Continue building the analytical framework. Begin development of a representative sensor prototype model. Continue to identify gaps in capability to conduct rapid program analysis and conduct feasibility assessments for tool(s) development. Begin development of selected model and database linkages between analytic framework and decision support personnel. Demonstrate the architecture of the multivariate decision support tool and develop a prototype. Develop High Level Architecture (HLA) federates and components for the CB urban experimental and evaluation simulation.

Total 30257

FY 2007 Planned Program:

- 9863 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA#5/6/8/9 - 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 CONTAM model linkages. Test and verify software upgrades.

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2007 Planned Program (Cont):

- 4879 Chemical and Biological Hazard Environment Prediction (non-DTO) BCA#3/5/6/8 - Complete development of data assimilation techniques to improve forecasts of near-surface characteristics important for hazard prediction. Complete development of modules for Joint Effects Model (JEM) for high altitude, urban, littoral and coastal environments, and indoor scenarios. Integrate and field test sensor data fusion efforts with JEM. Model key physics for large scale events for the high altitude intercept module. Continue the development of a test-bed for transport and dispersion modeling. Conduct two week coastal and littoral meteorological and tracer concentration measurement program for coastal & littoral dispersion. Provide validation procedures for urban contaminant transport models. Validate wind tunnel and FAST3D-CT with OKC field trial data. Provide validation report. Develop/integrate/test new Cellular Automat CBR specific models. Evaluate mesoscale model forecasts using available observations for improved coastal urban dispersion prediction.
- 2400 Sensor Data Fusion - Hazard Prediction with Nowcasting (DTO CB62) BCA#5/6 - Complete DTO CB62. Integrate improved near-surface meteorological forecast capabilities into JEM. Deliver final report and computational implementation of preferred algorithm(s) for source term estimation. Test sensor placement software suite against existent data. Develop Graphical User Interface (GUI) and Application Program Interface (API). Begin selection of best source term estimation tool.

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DATE **February 2006**

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

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

PROJECT
CB2

FY 2007 Planned Program (Cont):

- 6500 Battlespace Management BCA#2/3/4/8/9 - Build Net-Centric Enterprise Systems (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 Joint Warning And Reporting Network (JWARN) related sensors and nodes. Begin test of CBRN interfaces to assess impact on JWARN and other Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) entities. Begin preliminary research on alternative CBRN display technologies. Continue sensor-data fusion and source term location technologies with eventual integration with Joint Effects Model (JEM) and Joint Operational Effects Federation (JOEF).
- 2686 CBDP Decision Capability BCA#1-39 - Continue building the analytical framework. Continue to identify gaps in capability to conduct rapid program analysis and conduct feasibility assessments for tool(s) development. Begin 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 JSAF plug-ins and Urban Resolve capability for the urban experimental and evaluation simulation. Transition capability.

Total 26328

	FY 2005	FY 2006	FY 2007
Protection	8664	10645	10311

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments:

- 1355 Advanced Air Purification System Model (DTO CB61) BCA#11 - Developed conceptual modules for Advanced Air Purification Systems Model. Developed draft matrices for air purification systems that can address wide application requirements by providing the optimal mix of technologies. Model incorporates mature unit processes for the purpose of providing broader protection than current single pass filter technology. Performed testing on lab-scale systems measuring performance data.
- 1249 Collective Protection, Air Purification BCA#11- Characterized and optimized performance of single pass filters using advance chemical sorbents and aerosol/particulate removal processes. Terminated study of toxic industrial chemical degradation of High Efficiency Particulate Arresting (HEPA) filters due to change in requirements. Developed advanced air purification technology demonstrators based upon temperature swing adsorption and electrical swing adsorption approaches and integrated with environmental control units. Leveraged developmental residual life indicator hardware and completed initial chemical pulsing concepts to probe filter adsorbent capacity.
- 1098 Collective Protection, Shelters BCA#11- Explored airlock concepts focusing on improved airflow properties and ease of use features using computer modeling as well as purge testing. Novel CB closures were fabricated, tested and down-selected to the best performing concept for further development and testing. Continued development of new impermeable CB resistant barrier material, starting with a front-end analysis and identification of conceptual configurations leading to prototype shelter system using newly developed shell material. Performed simulant and agent testing on cloth swatches treated with self-decontaminating chemistries. Demonstrated overpressure performance of expedient coating formulations to reduce leakage and conducted chemical permeability testing of the formulations.

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 972 End-of-Service-Life Indicators (ESLI) for NBC Mask Filters (DTO CB36) BCA#19 - Selected color-change technology was successfully demonstrated in filter test beds. Modified commercial respirator cartridges and Joint Service General Purpose Mask (JSGPM) filter elements to assess ESLI prototype baseline performance against the target CWAs. The ESLI proved to be an effective colorimetric indicator for certain high-priority toxic industrial chemicals (e.g., chlorine and sulfur dioxide). Tests conducted to evaluate ESLI service life and shelf life successfully demonstrated the ability of the technology to meet the climatic operational and storage performance requirements for the Joint Service General Purpose Mask (JSGPM). The ESLI technology is transitioning to the JSGPM.
- 1100 Respiratory Protection-Enhanced Chemical and Biological Radiological and Nuclear (CBRN) BCA#19; Non Traditional Agents (NTA); and Toxic Industrial Chemical (TIC) Protection - Developed final concepts for active and passive pressurization. Several advanced mask concepts were completed and presented for comment to both the user and acquisition communities at a workshop in August 2005. Bio protection factor (PF) test procedures were validated, a human bio-PF study conducted, and a final report prepared. The bio-PF test protocol and apparatus is now available for evaluating current and future masks. Results of these efforts will be used for the assessment of current masks, and in the development of future masks.
- 1344 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) BCA#26 - Down-selected materials from DTO studies as well as auxiliary projects (Congressionals, DARPA projects, and SBIRs). Down-selected materials - chloramines are multifunctional; nanoparticles of Al2O3 and TiO2 are promising. POM catalysts were optimized. New permselective membranes were assessed in addition to nanofiber membranes.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 395 Individual Protection Percutaneous Protection BCA#27 - Reduced Physiological Burden - Developed and evaluated the performance of prototype intermittent microclimate cooling system components. This technology supports future protective ensembles.
- 1151 Individual Protection, Percutaneous Protection, Enhanced Protection (Aerosol NTAs and Bio) BCA#26 - Prepared and evaluated carbon-loaded fabric with nanofiber and membrane backing suitable for fabrication into prototype garments. Developed and evaluated advanced closure concepts and initiated fabrication of optimized closure candidates. Developed swatch test technology for assessing the role of wind speed in challenging penetration of individual protection equipment. Resulting technologies/knowledge will transition to support future protective ensemble.

Total 8664

FY 2006 Planned Program:

- 700 Advanced Air Purification System Model (DTO CB61) BCA#11 - Configure laboratory-scale systems, define test and evaluation methodology, and measure the required design and system integration data (characterize unit processes). Develop initial version of Advanced Air Purification System Model.
- 1042 Improved Single-Pass Filters BCA#11 - 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. Develop chemical probes, hardware and methodology to assess residual life indicator Collective Protection (COLPRO) chemical filters. Assess and report the impact of particle size distribution and long-term loading by measuring efficiency changes on aerosol/particulate flat sheet HEPA media and full size HEPA filters.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 1385 Regenerative and Reactive Air Purification BCA#11 - Perform lab-scale studies of two and four bed Temperature, Pressure, and Electrical Swing Adsorption regenerative air purification systems. Initiate new evaluations of three competing Electrical Swing Adsorption technologies by constructing equivalent test stands. Apply temperature and pressure regenerative system technology to DTO CB61 and then to Joint Expeditionary Collective Protection (JECP) Technology Readiness Evaluation (TRE) in FY08. Initiate new development of reactive air purification technologies.
- 1385 Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating BCA#11 - Continue the development of expedient protective coatings, determine material interactions and permeability and perform conceptual soft shelter testing. Develop a family of coatings that will form a gas impermeable film for expedient encapsulation and CB hardening of existing structures. Initiate new development of microcrystalline and nanocrystalline cellulose materials for use with reactive chemistries.
- 1375 Shelter Systems and Contamination Control Area (CCA)/Airlock/Toxic Free Area (TFA) (CCAATFA) BCA#19 - Advance and integrate collective protection shelter system technologies for airlocks, CB closures, CB barriers (impermeable and permeable reactive) and seaming. Develop a regenerable reactive coating that is thin and flexible that will neutralize chemical and biological warfare agents upon contact. For CCAATFA processing convene working group to analyze threat, systems and current protocol; perform initial Computational Fluid Dynamics (CFD) airflow analysis, testing and generate interim report detailing CCAATFA processing.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 1773 Respiratory Protection-Enhanced CBRN/NTA/TIC Protection BCA#27 - Complete trade-off analysis and initiate fabrication of advanced mask concept prototype models. Trade-off analysis will be conducted and down-selects made of the most promising technologies for protection enhancement. This will include intelligent seals and may also include micro-reactors for air purification, micro-thermoelectric system for cooling, and active air management systems for comfort and protection. Develop and evaluate a dual-cavity sealing system for insertion into selected mask platform.
- 1010 Individual Protection, Percutaneous Protection, Reduced Physiological Burden BCA#27 - Complete development of the Pulsed Microclimate Cooling System (PMCS), conduct bench-top, and human physiological testing, and transition to Army Technology Objective (ATO[R] NSC-03) Soldier Borne Microclimate Cooling Technologies, and other programs for further development. Conduct laboratory testing of breadboard metal hydride cooling system to assess thermal characteristics. Demonstrate selective and responsive nanopore-filled membranes synthesis concept, and encapsulated nanofiber mesh membranes fabrication. Measure permeability response of concept membranes as a function of electrical stimuli. Synthesize polymers and blends for application in elastomeric permselective membranes, evaluate water vapor and stimulant permeation, and model polymer molecular dynamics. Technologies support future protective ensembles.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 1596 Individual Protection, Percutaneous Protection, Enhanced Protection (Aerosol NTAs and Bio) BCA#26 - Down-select aerosol barrier materials and closure concepts, incorporate both into an initial prototype garment, and evaluate. Optimize materials, closures, and suit design based on results of the evaluation. Characterize Individual Protection Equipment (IPE) materials filter efficiency for particle sizes and wind speeds, assess effect of material geometry on filter efficiency, and correlate challenge deposition in IPE systems with swatch, component tests at elevated wind speeds. Develop lab-scale non-woven polymer membrane samples and evaluate to assess particle removal efficiency and air permeability. Resulting technologies/knowledge will transition to support future protection ensembles.
- 379 Individual Protection, Percutaneous Protection, Enhanced Protection (Liquid NTAs and TICs) BCA#26 - Identify candidate fibers as support structures for sorbents and reactives and initiate laboratory evaluation of prototype fabrics to assess physical and permeation characteristics. Conduct market research to identify innovative materials applicable to protective boots and gloves, and identify candidates for further consideration.

Total 10645

FY 2007 Planned Program:

- 500 Advanced Air Purification System Model (DTO CB61) BCA#11 - Develop several potential system configuration designs. Initiate development of test apparatus and methodology for Advanced Air Purification System Model.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2007 Planned Program (Cont):

- 900 Improved Single-Pass Filters BCA#11 - Investigate adding ethylene oxide, nitrogen dioxide and carbon monoxide functionalities to CP filters. Transition polishing sorbent technology Pressure Swing Adsorption (PSA), Temperature Swing Adsorption (TSA) and Pressure/Temperature Swing APTSA Regenerable Collective Protection. Complete sorbent work and transition technology to enhance performance of single-pass filters, regenerative systems, to DTO CB61 and to Joint Expeditionary Collective Protection (JECP) FY08 TRE.
- 1926 Regenerative and Reactive Air Purification BCA#11 - Optimize Temperature Swing Adsorption (TSA) and ESA operating parameters, adsorber design and test. Demonstrate air purification technology based on SELective ionization and contaminant EXtraction (SELEX).
- 1165 Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating BCA#11 - 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.
- 1770 Shelter Systems and Contaminated Control Area (CCA)/Airlock/Toxic Free Area (TFA) (CCAATFA) - Identify novel technologies for application in the CCAATFA and develop initial CATFA processing system design.
- 800 Respiratory Protection-Reduced Physiological Burden BCA#19 - Identify data gaps necessary for correlating respiratory resistance with performance and conduct testing to resolve. Initiate model development for predicting performance from respiratory resistance. This effort fulfills a knowledge gap and supports all current and future mask efforts.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2007 Planned Program (Cont):

- 900 Individual Protection, Percutaneous Protection, Reduced Physiological Burden BCA#27 - Develop brass-board metal hydride cooling system and conduct laboratory testing to validate thermal analysis. Develop a database relating selectivity and electrical stimulus responsiveness of nanopore-filled membranes as a function of polymer-polymer nanocomposite structural and chemical attributes. 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.
- 1100 Individual Protection, Percutaneous Protection, Enhanced Protection (Aerosol NTAs and Bio) BCA#27 - Produce optimized second-generation prototype garment employing both aerosol barrier materials and advanced closures and evaluate. Based on results, produce a final concept garment for limited field-testing. Develop one m2 non-woven polymer membranes material, incorporate into a prototype fabric system and assess performance. Resulting technologies/knowledge will support future protection ensembles.
- 1250 Individual Protection, Percutaneous Protection, Enhanced Protection (Liquid NTAs and TICs) BCA#26 - Based on FY06 evaluations, optimize novel fiber/fabrics and conduct fabric characterization and stimulant permeation testing. Conduct preliminary physical and chemical testing of candidate materials for glove and boot applications and down-select to most promising candidates. Initiate new efforts to assess and mediate the effect of liquid NTAs on percutaneous protection. Technologies will support the Joint Chemical Ensemble.

Total 10311

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

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

PROJECT
CB2

	FY 2005	FY 2006	FY 2007
Threat Agent Sciences	27878	31852	37422

FY 2005 Accomplishments:

- 3250 Threat Agents and Simulants - Continued and expanded efforts to determine and validate new synthesis targets. Continued to fill data gaps relative to classical and novel threat agents, toxic industrial chemicals, and CW agent simulants. Continued to catalog agent properties in searchable database. Continued investigations of inhalation toxicity of NTAs.
- 2218 Biological Threat Agents - Continued to synthesize small quantities for defensive RDT&E, toxicologically screened, characterized and identified new threat materials and filled identified data gaps for established biological threat agents. Continued to characterize fundamental properties of Y. pestis and initiate work on B. mallei. Completed characterization of fundamental properties of a viral family and continued characterization of a second viral family selected by biodefense priorities. Completed improvement of Erwinia herbicola antigenicity, and continued exploration of novel peptide-based bio simulants and research on a new viral simulant. Continued upgrading the data in the agent/simulant knowledge base technical information system and initiated the collection and quality assessment of toxicology data. Investigated physical properties and decontamination properties of B. mallei and baculovirus.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 2035 Aerosol Technology - Continued investigations of approaches to advanced inlets for aerosol collection in high air speed conditions. Continued experimental studies of novel collectors, electrostatic collector, impeller, mini-slit, and other low power aerosol collection devices. Continued characterization of emerging collectors and collection technology. Upgraded existing chambers and wind tunnels. Continued evaluations of new and prototype chemical detectors using chemical simulant aerosols. Continued computational fluid dynamics (CFD) modeling for the windbreak approach of sampling from high speed flows. Efforts terminated in FY05 due to lack of JPEO requirements and to reprioritize funding for agent characterization and simulant development.
- 3275 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Predictive Modeling - Evaluated Agent Fate secondary evaporation model versus the Vapor Liquid Solid Tracking (VLSTRACK) module and evaluated each with agent lab trials to determine accuracy of downwind vapor predictions. Tuned model/module and integrated into Joint Effects Model (JEM). Completed agent/inert substrate prediction model from lab-scaled wind tunnel data. Continued to work the scaling of agent vapor concentrations from laboratory to outdoor test conditions. Continued chemical hazard estimation method and risk assessment tool (CHEMRAT) update with new agent fate test data. Continued to update secondary evaporation model with new agent fate test data and incorporated into JEM.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2005 Accomplishments (Cont):

- 2800 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Methodology Development - Determined degradation products of agents on surfaces of interest such as concrete. Examined the fate of nerve agents (VX, GD) and non-traditional agents (NTAs) on asphalt by nuclear magnetic resonance (NMR). Examined the fate of V analogs, NTAs and thickened agents on surfaces under different temperature and humidity conditions by HS-SPME. Determined sorption and fate of nerve agent (VX) on sand and clay soil. Determined sorption and fate of nerve agents (GD, VX) on assembled test soil.
- 7100 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Lab/Large-Scale Wind Tunnel Studies - Continued surface residual agent testing to determine contamination levels. Completed surface evaporation tests of nerve agents (VX, GD) and blister agent (HD) on a non-porous substrate. Started surface evaporation testing of thickened CW agents on soil, asphalt and concrete.
- 500 Modeling and Simulation - Completed and transitioned agent/inert substrate prediction module to Joint Operational Effects Federation (JOEF) and JEM.
- 5500 Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) - Low Level Operational Toxicology Studies - Conducted cross-validation studies, based on a validated dosimetric for exposure route comparison that refine operational human health risk assessments for exposure to the nerve agents. Extended the useful range of prediction for inhalation exposures to nerve agent (GF) expected in various military response settings. Initiated nerve agent (VX) studies that extend time-effect predictive capability.
- 1200 Biological Agent Fate - Continued assessments of the persistence of biological warfare agents if released into operational environments.

Total 27878

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program:

- 5500 Agent Fate Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Continue Predictive Modeling, Methodology Development, Fundamental Laboratory Measurements and Outdoor Live Agent Testing of HD, VX and GD on operationally relevant surfaces. Use data to develop models and transition models to the Joint Effects Model (JEM).
- 967 Agent Fate Predictive Modeling in support of DTO CB42. BCA#5/6/23/28/39 - Complete HD and VX evaporation models from lab-scale wind tunnel data and validate model predictions in limited field trials. Complete liquid contact model.
- 2161 Agent Fate Methodology Development in support of DTO CB42 BCA#5/6/23/28/39 - Complete and publish reaction chemistry of HD, VX, and GD on concrete, asphalt, and sand.
- 6272 Agent Fate Fundamental Laboratory Measurements of the Environmental Fate of Chemical Agents on Surfaces in support of DTO CB42 BCA#5/6/23/28/39 - Complete laboratory surface evaporation tests of VX, limited tests of GD and HD, on operationally relevant surfaces.
- 2253 Agent Fate Lab/Large-Scale Wind Tunnel Studies in support of DTO CB42 - Complete surface evaporation tests of HD on operationally relevant surfaces in lab-scale and outdoor tests for model validation.
- 664 Agent Fate Biological Toxin Fate in Water Matrices - Continue to measure the persistence (viability) of biological warfare agents released into operational environments.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2006 Planned Program (Cont):

- 7760 Low Level Toxicology, Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) Low Level Operational Toxicology Studies - Conduct validation studies for predictive models that refine and extend the ability to extrapolate to human operational health risk from exposure to nerve agents. Complete GF exposure studies and extend time course and dose-response studies for VX non-threshold effects relevant to military response settings. Initiate studies for nerve agent GD that lead to a refined operational human health risk assessment. Continue and expand evaluations of inhalation toxicology for traditional agents to deliver science-based exposure standards for operational risk management decision tools.
- 400 Low Level Toxicology, Toxicokinetic and Toxicodynamic Modeling of Biological Agent - Initiate 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).
- 1347 Agent Characterization and Simulant Development - Continue applied research into NTA chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants.
- 2371 Agent Characterization and Simulant Development - Initiate simulant and methodology development projects to address requirements in programs of record, as aligned by the CBDP Test and Evaluation community.
- 267 Computational Chemistry - Independent assessment and evaluation of the Quantitative Structure Activity Relationship (QSAR) field.

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

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

PROJECT
CB2

FY 2006 Planned Program (Cont):

- 907 Computational Chemistry - Quantum-Chemical Modeling of Chemical Warfare Agent (CWA)/adsorbent interaction - Initiate Quantum-Chemical modeling effort to compute the interaction of CWA simulants and real CWAs on oxide surfaces and other surfaces/materials of operational interest.
- 533 Computational Chemistry - in-silico Predictive Modeling Tools - Identify, validate and select a new suite of operationally suitable CWA simulants for Operational Test and Evaluation.
- 200 Computational Chemistry - Support the Biological Warfare module to the ARGUS data fusion capability. Develop a data mining tool to provide Indications and Warnings of enemy BW agent development.
- 250 Science Information Support - Provide support to OSD-CPP policy development efforts.

Total 31852

FY 2007 Planned Program:

- 2400 Agent Fate - Predictive Modeling for Thickened CWAs. Develop evaporation models of thickened HD and VX using data from lab-scale wind tunnel data and field trials. Transition models to the Joint Effects Model (JEM).
- 1333 Agent Fate - Fundamental Laboratory Measurements of Thickened CWAs on Surfaces. Kinetic studies of the fate of thickened VX and HD on operationally relevant surfaces.
- 3333 Agent Fate - Lab/Large-Scale Wind Tunnel Studies of Thickened CWAs. Refine protocols for laboratory wind tunnels and collect data on thickened HD and VX evaporation.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2007 Planned Program (Cont):

- 3500 Agent Fate - Environmental Fate of Non-traditional Agents. Initiate DTO CB68 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. Methodology development is a primary thrust of this first year of the DTO.
- 4333 Low Level Toxicology - Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO CB51) - 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.
- 1333 Low Level Toxicology - Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) - Integration Studies. Deliver refined human health risk assessment for HD inhalation exposures suitable for incorporation into Operational Risk Management processes.
- 1333 Low Level Toxicology - Methodology Development in Support of DTO CB51. Continue development of technically demanding exposure and analytic methods for selected very low volatile chemical threat agents, such as non-traditional threat agents (NTA).
- 667 Low Level Toxicology - Toxicokinetic and Toxicodynamic Modeling of Biological Agent. Continue to develop 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).

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2007 Planned Program (Cont):

- 7060 Low Level Toxicology - Chemical Warfare Agent Operational Exposure Hazard Assessment Research, NTA and Contact Toxicity. Initiate DTO CB69 research program 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 in previous year, expand and target studies that will directly lead to a human health risk assessment exposure standard.
- 1333 Agent Characterization and Simulant Development - Continue basic research into NTA chemistry, characterizing synthetic pathways and NTA products, and developing NTA simulants.
- 3333 Agent Characterization and Simulant Development - Continue simulant and methodology development projects to address requirements in programs of record, as aligned by the Test and Evaluation community. Initiate simulant correlation studies to define operational envelopes in which simulants may be used for Development Test and Operational Test.
- 1200 Computational Chemistry - Quantum-Chemical Modeling of CWA/adsorbent interaction - 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.
- 1333 Computational Chemistry - Transition COTS Quantitative Structure Activity Relationship (QSAR) toolsets to 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. Intent is to establish expertise and baseline against well-characterized substrates before moving toward human toxicology QSAR toolsets.

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

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

PROJECT
CB2

FY 2007 Planned Program (Cont):

- 2667 Computational Chemistry - Continue Quantum-Chemical Modeling (QCM) tool development. Initiate 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.
- 931 Science Information Support - Support to OSD-CPP policy development efforts. Manpower, travel and conference costs for Management, Red Team, Blue Team and Senior Advisory Group support to the Joint community for Policy development ISO CB defense operations.
- 1333 Science Information Support - Data collection and generation to support policy development. Initiate scientific studies required by the Joint community to establish facts necessary for Policy development ISO CB defense operations.

Total 37422

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	1317	0

FY 2006 Planned Program:

- 1317 SBIR

Total 1317

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PROJECT
CB2

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	87033	110219	78236	72496	75429	67855	56786	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869
TT3 TECHBASE TECHNOLOGY TRANSITION	0	11127	11087	7879	8340	8688	8627	Cont	Cont

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COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	42987	88779	145073	76474	54837	43864	41114	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH): This project funds applied research on the development of vaccines, therapeutic drugs, and diagnostic capabilities to provide an effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. Innovative biotechnology approaches and advances will be incorporated to obtain medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project include Defense Technology Objectives (DTOs); science and technology programs in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics and Emerging Threats); and directed research efforts, including the Chemical and Biological Defense Initiative (CBDI) fund. Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #22 (Medical Therapeutics - Limited anti-viral/ toxin development), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Transformational Medical Technology Initiative	0	17484	108715

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program:

- 17484 Multiagent (Broad Spectrum) Medical Countermeasures - Pursue 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. Develop ex vivo cell-based model systems or minimize requirements for the study of medical countermeasure bioactivity, efficacy and safety. Develop a rapid re-sequencing technology using state of the art, commercially available microarrays.

Total 17484

FY 2007 Planned Program:

- 108715 Multiagent (Broad Spectrum) Medical Countermeasures - This effort is part of the Quadrennial Defense Review (QDR) "leading edge" investment to develop broad spectrum medical countermeasures against future genetically-engineered bio-terror threats, for which there are no current defenses. Develop massively parallel microfluidics techniques for analyzing protein and/or nucleic acid signatures at submicromolar levels in physiological fluids using nanotechnology advances to monitor pathogen/host pathogenesis pathway expression products. Continue to develop 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. Implement ex vivo cell-based model systems to replace animal models in the study of medical countermeasure bioactivity, efficacy and safety. Develop artificial cell/artificial tissue models for the testing of medical countermeasure bioactivity, efficacy and safety. Expand development of rapid re-sequencing applications.

Total 108715

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	FY 2005	FY 2006	FY 2007
Congressional Interest Items	20531	28031	0

FY 2005 Accomplishments:

- 3868 Alternative Delivery Methods for Recombinant Protein Vaccines - Developed countermeasures against bioterrorist attack by evaluating advanced vaccine delivery platforms that can be deployed rapidly and that allow self-vaccination.
- 1389 Biological Countermeasures (Rapid Antibody-Based Biological Countermeasures (RABBC)) - Generated vaccines and antibody-based biological weapon countermeasures to detect and treat known strains of native and weaponized bacterial pathogens.
- 992 BioTerNet Networking and Strain Tracking - Created a network that incorporates biological agent strain identification with tracking and enables quick dissemination of information to network participants.
- 992 Genetic Reassortment by Mismatched Repair-Enhanced Acute Biowarfare Therapy Program - Developed an enhanced, novel DNA shuffling technology able to generate large libraries of gene sequences faster and more efficiently than traditional technologies.
- 1785 Heat Shock Protein (HSP) Rapid Vaccine - Demonstrated an effective vaccine for smallpox using HSP.
- 992 Heteropolymer Anthrax Monoclonal Antibody - Developed Anthim, a heteropolymer monoclonal antibody, as a therapeutic to treat exposure to anthrax spores.

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FY 2005 Accomplishments (Cont):

- 1091 Multi-Purpose Biodefense Immunoarray - Developed a proteome microarray as a tool for flexible, rapid characterization of new and novel pathogens and expedited development of countermeasures.
- 2777 Novel Viral Biowarfare Agent ID and Treatment - Developed a novel approach to anti-viral therapeutics based on high-throughput screening of compounds against intermediates of the virus capsid assembly pathway.
- 2777 Vaccines and Therapeutics to Counter Biological Threats - Continued to explore efficacy of mucosally delivered vaccine candidates to bacterial and viral pathogens.
- 1389 Global Pathogen Portal - Aided the rapid detection, identification, and forensic attribution of high-priority biothreat pathogens by using analysis and visualization tools.
- 2479 Virginia Bioinformatics Institute - Built on previous work on the PathPort (Pathogen Portal) project by adding system enhancements, data curation and new system functionalities.

Total 20531

FY 2006 Planned Program:

- 991 Advanced Neutron Radiography.
- 3268 Alternative Delivery Methods for Recombinant Protein Vaccines - Continue development of countermeasures against bioterrorist attack by evaluating advanced vaccine delivery platforms that can be deployed rapidly and that allow self-vaccination.
- 2526 Biowarfare Diagnosis and Therapy via Mismatch Repair.

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FY 2006 Planned Program (Cont):

- 2526 Botulinum Neurotoxin Research (Only for Research on fluorescence resonance energy transfer assays and antagonists).
- 2476 Global Pathogen Portal (PathPort) - Continue to explore the rapid detection, identification, and forensic attribution of high-priority biothreat pathogens by using analysis and visualization tools.
- 991 Institute for Advanced Pharmaceutical Sciences.
- 1387 Multipurpose Biodefense Immunoarray - Continue development of a proteome microarray as a tool for flexible, rapid characterization of new and novel pathogens and expedited development of countermeasures.
- 3961 Novel Viral Biowarfare Agent ID and Treatment - Continue development of a novel approach to anti-viral therapeutics based on high-throughput screening of compounds against intermediates of the virus capsid assembly pathway.
- 991 Rapid Pathogen Amplification and Detection System (RPADS).
- 4952 Bug-to-Drug Program.
- 2971 Marburg Countermeasures.
- 991 Proteomics R&D improved Drugs and Diagnostics against BW.

Total 28031

	FY 2005	FY 2006	FY 2007
Diagnostics	3770	8186	10010

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2005 Accomplishments:

- 2170 Diagnostic Technologies - Developed/evaluated new nucleic acid and immunoassays specific for different bacterial and viral targets in order to enhance current detection capabilities. Augmented toxin detection capabilities; designed tests to identify the presence of a biologically active toxin in a clinical sample. Directed research towards solving the technical problems associated with clinical sample preparation and rapid diagnostics; demonstrated equivalence of a manual kit and JBAIDS, Block I DNA extraction kit; resulted in a decreased sample requirement and eliminated the need for a large piece of deployable instrumentation. Tested DoD developed assays, reagents and sample preparation techniques and platforms in field studies. Demonstrated that recombinant antibodies for ricin and botulism significantly improved toxin detection capability in current gold standard assays. Initiated process to build a pathogen database for a DARPA transitioned broad range pathogen detection system capable of identifying genetically engineered strains. Initiated development of a proteomics-based microarray to detect the organism causing plague. Built a bioinformatics database correlating early biomarkers of infections caused by selected biological warfare agents.
- 1600 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Began to elevate previously transitioned nucleic acid assays to test and evaluation standards established during FY04 beginning with assay(s) selected for JBAIDS, Block I.

Total 3770

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program:

- 6686 Diagnostic Technologies - Target a potential block improvement to Joint Biological Agent Identification and Diagnostic Systems (JBAIDS), Block I; design/initiate a multi-center comparison of automated extraction technologies versus the JBAIDS manual kit. Design multiplexed nucleic acid assays for the detection and identification of validated threat agents in clinical samples. Address gaps in and assess novel technologies for assay development. Continue to test DoD developed assays, reagents and sample preparation techniques and platforms in field studies; develop a more coordinated joint approach to performing field studies and providing useful feedback to assay developers. Evaluate newly developed assays targeting the presence of active toxin in a clinical sample; expand toxin diagnostics to support JBAIDS, Block II. Accelerate development of alternate sampling/extraction techniques to address JBAIDS, Block I gap in sample processing. Mature study assessing host response to immunization in biowarfare vaccine recipients. Expand evaluation of new chemistries for the identification of biological warfare agents to latest state-of-the-art methods. Mature recombinant DNA technologies for mass immunodiagnostic reagent production. Continue to build pathogen database for a DARPA transitioned broad range pathogen detection system capable of identifying genetically engineered strains. Further develop techniques to develop a proteomics microarray to detect plague infection. Identify gene sets corresponding to early biomarkers of infection caused by selected biological agents.
- 1500 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Continue to elevate previously transitioned assays to test and evaluation with preference for assays selected for JBAIDS, Block I.

Total 8186

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2007 Planned Program:

- 8410 Diagnostic Technologies - Expand design of multiplexed assays to include immunoassays. Continue to test DoD developed assays, reagents and sample preparation techniques and platforms in field studies. Field test confirmatory tests for toxins and continue to expand toxin diagnostics and to support JBAIDS, future diagnostic capability as new genomic data becomes available. Complete a multi-center comparison of automated extraction technologies versus the JBAIDS manual kit. Continue research directed at increasing sample concentration and extending sample viability prior to testing. Collate/analyze microarray data reflecting host response to immunization from biowarfare vaccine recipients. Continue to build a data base for a DARPA transitioned broad range pathogen detection system capable of identifying genetically engineered strains. Utilize proteomics data to design immunologic assays for biological pathogen detection. Collect data on host response to bacterial pathogens in order to develop gene sets. Continue to assess components of future comprehensive integrated diagnostic system suitable to both hand held and reference laboratory confirmatory testing. Investigate technologies capable of integrating nucleic acid and immunodiagnostic testing and initiate developmental testing in anticipation of support to JBAIDS, future diagnostic capability.
- 1600 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Continue to elevate previously transitioned assays to test and evaluation with preference for assays selected for JBAIDS, Block I and potentially Block II.

Total 10010

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	FY 2005	FY 2006	FY 2007
Emerging Threats	1248	1679	1400

FY 2005 Accomplishments:

- 1248 Genetically Engineered Threats - Investigated structure of inhibitors of spore germination. Structure based rational design of biological warfare (BW) threat agent countermeasures using X-ray crystallographic techniques.

Total 1248

FY 2006 Planned Program:

- 526 Genetically Engineered Threats - Conduct evaluation of spore germination inhibitors and their effectiveness (research continuing into 2007 will be listed in the Therapeutics Area under Therapeutics for Bacterial Agents and Therapeutics for Viral Agents, as appropriate).

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program (Cont):

- 1153 Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies (DTO CB64) - Provide for rapid, inexpensive, high-throughput, microarray-based DNA resequencing of biothreat agent genomes, whether they are naturally occurring, newly arising, or genetically engineered strains. Develop the capability to perform whole-genome sequencing in single laboratories with minimal space and personnel requirements at less than 1% of the current cost of existing, non-DOD industrial genome sequencing centers. Enable immediate definitive identification of the organism and provide specific data on the presence of any engineered elements. Develop and implement collection procedures and expand biothreat agent strain collection. Demonstrate and evaluate two high-density microarray systems.

Total 1679

FY 2007 Planned Program:

- 1400 Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies (DTO CB64) - Demonstrate greater than 3-fold scale up of high-throughput experimental protocols and systems for rapid microarray-based resequencing. Resequence 10 B. anthracis and 10 Y. pestis group genomes; release data to other relevant DOD projects. Expand biothreat agent strain collection. Evaluate microarray feature size reduction/increased density on two platforms.

Total 1400

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PROJECT
TB2

	FY 2005	FY 2006	FY 2007
Pretreatments	6662	15585	13843

FY 2005 Accomplishments:

- 500 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - Continued to analyze mutants with various engineered attenuating mutations to determine their suitability for use as vaccine platforms. Enhanced studies to establish an eastern equine encephalitis (EEE) virus non-human primate efficacy model.
- 700 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Incorporated antigen targets from earlier studies to improve vaccine candidates as determined from characterization studies and concurrent testing.

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FY 2005 Accomplishments (Cont):

- 5462 Vaccine Research Support - Continued to develop lead vaccine candidates against plague (F1-V fusion antigen vaccine) and ricin. Evaluated the role of capsule in the development of a generation-after-next anthrax vaccine. Investigated anthrax spore interactions with host cells and characterization of diverse B. anthracis strains for vaccine resistance. Continued studies on the ability of functional domains of botulinum neurotoxins (BoNT) to elicit protective immunity in animal models. Accelerated studies to increase immunogenicity of existing recombinant BoNT heavy chains (Hc) subunit vaccine candidates via adjuvants and/or method of delivery. Developed in-process and release assays for recombinant BoNT Hc vaccine candidates. Tested recombinant ricin vaccine (rRTA) candidate stability. Developed surrogate endpoints of clinical efficacy for higher animal species in ricin vaccine adjuvant studies. Tested novel adjuvants with lead ricin vaccine candidate. Determined stability of Staphylococcal Enterotoxin (SE) vaccine candidates. Tested oligonucleotide CpG as an adjuvant with live attenuated alphavirus vaccine candidates. Completed studies on correlates of immunity that protect against disease from filoviruses and alphaviruses. Evaluated the use of Virus-Like Particles (VLP) as antigen for vaccines for filoviruses. Began evaluation of a VEE replicon-based Marburg virus vaccine candidate.

Total 6662

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program:

- 500 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - Evaluate new EEE vaccine approaches in animal models in combination with WEE vaccine construct(s) and already transitioned VEE vaccine candidate V3526 or alternate VEE vaccine candidates made in the DNA- or replicon-based vaccine platforms. Initiate duration of immunity studies with lead candidates for each platform, comparing the individual constructs and trivalent formulations.
- 2500 Multiagent Vaccines, Multi-agent (molecular) Vaccines for Bio-Warfare Agents (DTO CB65) - Explore both molecular and protein-based trivalent vaccine platforms. Identify third pathogen to be targeted as the third component of the trivalent vaccine and initiate candidate antigen incorporation into a candidate vaccine construct for evaluation. Develop the optimal DNA backbone in combination with adjuvant formulation. Evaluate multi-epitope DNA vaccine constructs. Explore the use of alternative delivery strategies for optimizing the efficacy of genetic immunization. Focus development on DNA vector delivery systems that stimulate protective immunity following minimal dosing.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program (Cont):

- 3600 Multiagent Vaccines - (Formerly under Animal Models and Resuscitative Intervention) - Develop definitive non-human primate model to evaluate the efficacy of separate and combined VEE/WEE/EEE vaccine candidates (Venezuelan, Western, and Eastern equine encephalitis virus, respectively). Analyze additional WEE/EEE mutants with various engineered attenuating mutations. 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. Evaluate target antigens for Ebola virus vaccine development. Explore additional use of Virus Like Particles (VLP) or other viral constructs as antigen delivery platforms for filovirus vaccine development. Continue the evaluation of a VEE replicon-based Marburg virus vaccine platform. Start down-selection phase of the various filovirus vaccine candidate constructs (platforms) and evaluate alternative forms of delivery for comparative evaluation of vaccine efficacy.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program (Cont):

- 5985 Vaccine Research Support - Initiate the evaluation of intracellular pathogen candidate antigens using animal model systems including the use of alternative delivery platforms. Begin immunogenicity studies for generic Bacillus vaccine target antigens. Evaluate B and T cell epitope mapping of lead protective antigen candidates. Continue to evaluate novel antigen targets for next generation anthrax and plague vaccine development. Evaluate incorporation of recombinant lethal factor and edema factor from B. anthracis into an anthrax vaccine candidate for a multiagent vaccine approach. Examine in vivo antigen expression/recognition in non-human primates (NHPs). Evaluate the immunogenicity of intact catalytic and translocation domains of botulinum neurotoxins (BoNT). Continue developing in-process and release assays for recombinant BoNT Hc vaccine candidates. Continue recombinant ricin vaccine candidate stability testing. Continue to develop surrogate endpoints of clinical efficacy for higher animal species in ricin vaccine adjuvant studies. Clone/express proposed Staphylococcal Enterotoxin A (SEA)/Staphylococcal Enterotoxin B (SEB) structural determinants; determine stability of immunogens; raise neutralizing antibodies against immunogens and test for cross-reactivity among SE serotypes using in vitro systems.
- 3000 Vaccine Technology Development - (formerly under Resuscitative Intervention) Evaluate a recombinant protein-based trivalent vaccine (anthrax/plague/ricin) based on prototype anthrax/plague vaccine studies. Evaluate additional trivalent vaccine candidates that combine protection against anthrax and plague, as well as one additional target biothreat agent (e.g. Botulinum neurotoxin, Staphylococcus enterotoxin A/B, or an intracellular pathogen) using currently identified protective antigens. Test 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). Accelerate the development and design of generic gene-based vaccines targeting common target sequences in pathogens.

Total 15585

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2007 Planned Program:

- 500 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - Complete evaluation of live, site-directed mutagenized, attenuated viral vaccine. Perform final dose ranging studies in non-human primates (NHP) for efficacy of multiagent viral vaccine candidates. Evaluate a combined Venezuelan, Eastern, and Western Equine Encephalitis (VEE, EEE, and WEE, respectively) vaccine by identifying and characterizing WEE and EEE vaccine constructs that would be appropriate to combine into a single vaccine with the already transitioned VEE vaccine candidate V3526, or with alternative VEE vaccine candidates made in the DNA- or replicon-based vaccine platforms.
- 2500 Multiagent Vaccines - Multi-agent (molecular) Vaccines for Bio-Warfare Agents (DTO CB65) - Express the select bio-threat agent target from the DNA vector delivery system and assess immunogenicity and protective efficacy (injected and aerosol challenge) in animal models alone and in combination with the anthrax and plague elements. 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.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2007 Planned Program (Cont):

- 4119 Multiagent Vaccines - (formerly under Animal Models and Resuscitative Intervention) Conduct dose and antigen interference studies for the combined VEE/WEE/EEE (protein) vaccine in the definitive animal model. Concentrate continued filovirus vaccine development on down-selected vaccine delivery platform(s) based on assessment of most efficacious vaccine candidate. Continue assessment of candidate anthrax/plague multi-agent vaccines in animal models. Continue development and refinement of in vitro correlates of immunity. 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. Refine applied research to define correlates of immunity that protect against disease from filoviruses and alphaviruses. Continue to conduct studies of selected recombinant Ebola vaccine candidates. Finalize the evaluation of a VEE replicon-based Marburg virus vaccine candidate.
- 3224 Vaccine Research Support - Complete efficacy studies of ricin vaccine candidate through animal challenge models, including non-human primate studies. Continue the exploration of additional intracellular pathogen target antigens using animal model systems including the use of alternative delivery platforms. Accelerate B and T cell epitope mapping of lead protective antigen candidates. Test next-generation Staphylococcal Enterotoxin A/Staphylococcal Enterotoxin B (SEA/SEB) immunogens as vaccine candidates to protect against multiple SE serotypes in vivo. Complete stability and immunogenicity of SEB toxin vaccine in support of clinical trial. Continue studies on the immunogenicity of intact functional domains of botulinum neurotoxins (BoNT). Complete developing the in-process and release assays for recombinant BoNT Hc vaccine candidates. Evaluate enhanced next generation anthrax and/or plague vaccine candidates.

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FY 2007 Planned Program (Cont):

- 3500 Vaccine Technology Development - Continue to explore novel genetic immunization platforms toward the development of a multiagent anthrax-plague vaccine strategy and evaluate through animal immunogenicity studies. Begin 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. Evaluate vaccine performance requirements (route, dose, number of doses) in animal models. Determine adjuvant formulations/systems that enhance the efficacy of molecular vaccines in animal models. Expand alternative immunization platforms such as VLP, VEE replicons and adenoviral constructs for efficacy against selected biothreat pathogens and/or toxins. Continue to evaluate candidate vaccines in conjunction with oligonucleotide-based enhancement of the immune response. 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. Assess intracellular pathogen common target antigens for cross-reactivity/vaccination potential. Continue assessment of user-friendly vaccination modalities which confer rapid protection following minimal dosing.

Total 13843

	FY 2005	FY 2006	FY 2007
Therapeutics	10776	16959	11105

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FY 2005 Accomplishments:

- 1565 Therapeutics, Bacterial - Performed therapeutic efficacy studies in non-human primate models using hollow fiber bridging data. Studied on selected FDA-licensed antimicrobial compounds to support consideration for changing label indications for use against category A and B Biological Warfare (BW) threat agents.
- 2735 Therapeutics, Toxin - Assessed surrogate endpoints of human clinical efficacy for Staphylococcal Enterotoxin (SE) therapeutics. Identified two caspase inhibitors to counteract toxic effects of SEs, tested and evaluated their therapeutic efficacy in murine Lipopoly Saccharide (LPS)-potentiated model. Produced homozygous transgenic mice expressing high levels of human Major Histo-compatibility Complex (MHC) class II/human CD4 receptors. Found that aerosolized Staphylococcal Enterotoxin B (SEB) could induce lung lesions in the transgenic mice, similar to SEB lesions induced in non-human primates.
- 576 Therapeutics, Viral - Tested and evaluated therapeutic action of pharmacological compounds provided by industry in mouse and non-human primate models of filovirus infection. Developed methods for whole genome sequencing and completed the sequence of whole genome of monkeypox virus Katako Kombe and discovered new sequences to be used to design new therapeutic targets.

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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2005 Accomplishments (Cont):

- 2400 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Completed studies to evaluate drug efficacy of intravenous (IV) cidofovir in primate models that support the Food and Drug Administration (FDA) Animal Efficacy Rule. Evaluated activity in monkeypox primate animal model. Evaluated an oral prodrug of cidofovir to determine if it is a replacement for IV cidofovir. Identified new molecular targets and developed assays specific for those targets. Evaluated antiviral activity of collections of compounds to identify lead structures for development into antiviral drugs with emphasis on compounds acting through a different mechanism than inhibition of viral DNA polymerase. Identified and tested leading antivirals in appropriate animal models. Identified potential mediators of shock or toxemia and determined the basis for the pathogenesis of shock or toxemia in animal models. Performed a sequential sacrifice of variola in non-human primates (NHP) and evaluated a monkeypox virus containing the green fluorescent protein in NHP for use in companion sequential sacrifice study.
- 2500 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Developed recombinant human antibodies as passive immunotherapeutics against toxin A subtypes A1 and A2. Examined structural analogs of active-site inhibitors identified by high-throughput screening. Identified candidate Botulinum Neurotoxin (BoNT) receptor antagonists as therapeutic candidates. Established a central database and compound repository. Initiated ex vivo evaluation of lead compounds in model systems for therapeutic efficacy. Standardized in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for botulinum.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2005 Accomplishments (Cont):

- 1000 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Evaluated preliminary effectiveness and identified possible mechanisms of protection by previously uncharacterized monoclonal antibodies specific for Marburg (TB2) and Ebola (TB3) viruses. Performed a study in macaques challenged with Marburg virus (strain Ci67) to characterize the pathogenesis of Marburg virus in support of the FDA two animal efficacy rule.

Total 10776

FY 2006 Planned Program:

- 2220 Therapeutics, Bacterial - Test Antibacterial cytokine-based therapeutic candidates. Test CpG motifs (stimulators of immune response) in conjunction with antibiotics for plague therapy in an animal model. Continue to advance the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research.
- 3813 Therapeutics, Toxin - Develop formulations or prodrugs to overcome problems with metabolism, bioavailability or pharmacokinetics of compounds with otherwise acceptable antiviral profiles of new compounds. Test efficacy of combinations of monoclonal antibodies against multiple toxin serotypes in cell-based systems. Continue ongoing proof-of-concept studies with lead toxin therapeutics in vivo using qualified surrogate endpoints of human clinical efficacy.

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program (Cont):

- 2219 Therapeutics, Viral - Standardize leading antivirals in appropriate animal models. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Develop additional advanced applied resuscitative technologies that integrate established and emerging viral therapeutic modalities into suitable candidate therapies in humans.
- 1800 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Conduct initial evaluation in pock lesion variola primate model at the Centers for Disease Control and Prevention. Evaluate oral cidofovir prodrug against monkeypox in primate model. Conduct initial studies to determine drug efficacy. Evaluate minimal and sufficient viral therapeutic requirements such as dose, route, and area under the curve. Perform appropriate testing in nonhuman primates for FDA licensure consideration under the FDA Animal Efficacy Rule.
- 1000 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Develop lead mixtures of human antibodies against Botulinum Neurotoxin (BoNT) as passive immunotherapeutics in vivo. Complete 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. Generate information from research and use to develop a strategy, in concert with the advanced developer, for development of BoNT therapeutic candidates. Generate information from research and use to prepare a technology development plan for non-clinical studies of optimum therapeutic candidates/treatment modalities.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2006 Planned Program (Cont):

- 500 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Conclude data to select anti-Marburg monoclonal antibodies for molecular reengineering and primate testing. Begin shift from discovery of protein targets for Marburg virus therapy to testing of compounds to inhibit protein-protein interactions. Expand characterization of the role of neutrophils in innate and adaptive immunity to Marburg virus, focusing on cellular pathways possibly common to many viruses. Complete analysis of studies performed to evaluate the utility of recombinant nematode anticoagulant protein c2 (rNAPc2) against Marburg hemorrhagic fever in nonhuman primates.
- 5407 Resuscitative Intervention - Develop 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. Develop combined injury animal model (trauma and BW/CW agent) for a vesicating agent. Identify early markers via genomic or proteomic analysis, and physiologic status of interactive effects of combined injury in appropriate animal model. Initiate studies with Defense Advanced Research Projects Agency (DARPA) funded collaborators on ex vivo and in silico methods to model immune system function. Conduct initial evaluation of the pock lesion/variola primate model at the Centers for Disease Control and evaluate the oral prodrug Cidofovir for efficacy. Expand characterization of the monkeypox vs. primate-small pox model to prepare data packages for oral prodrug licensure.

Total 16959

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 2007 Planned Program:

- 4131 Therapeutics, Bacterial - Refine conceptual development and execute in vivo testing of novel broad-based innate immunity modulator therapeutic approaches against naturally occurring and genetically engineered category A bacterial pathogens, such as plague/anthrax. Continue investigation of specific licensed and investigational antibacterial products for use against these threat agents.
- 3555 Therapeutics, Toxin - Complete ongoing proof-of-concept studies with lead toxin therapeutics in vivo using qualified surrogate endpoints of human clinical efficacy. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition.
- 1210 Therapeutics, Viral - Screen novel antiviral compounds, optimize leading antivirals in appropriate animal models. Evaluate specific viral therapeutic requirements such as dose, route, and area under the curve. Explore adjuvant immunomodulatory and host-response therapeutic interventions in in-vitro and in-vivo systems.
- 1800 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Therapy for Smallpox and Other Pathogenic Orthopox Viruses - Development of the oral prodrug for therapy of smallpox, advanced efficacy studies in the preparation of investigational new drug (IND) submission package for the FDA.
- 409 Therapeutics, Therapy for Ebola and Marburg Virus Infections (DTO CB63) - Develop and characterize therapeutic technologies against the Ebola virus and Marburg virus. Technologies include antisense oligonucleotides, recombinant human monoclonal antibodies, small interfering RNAs, small molecules, and therapeutic vaccines. Improve existing animal models for filoviral hemorrhagic fever. Begin stringent comparative efficacy studies to identify "best performing strategies."

Total 11105

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

DATE
February 2006

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

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

PROJECT
TB2

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	855	0

FY 2006 Planned Program:

- 855 SBIR

Total 855

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	67899	88830	96736	143039	200722	229218	131723	Cont	Cont

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	24426	23657	30682	38927	41418	40598	39136	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 prevention of chemical casualties. Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), and Gap #38 (Diagnostics - Reagent Verification).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	7687	2526	0

FY 2005 Accomplishments:

- 992 Neurotoxin Mitigation Research - Investigated the wide array of circulating serum proteins that may bind organophosphate poisons in a mouse model, to identify potential new target proteins to serve as less expensive bioscavengers than the highly expensive compound now in development. Several new potential compounds were identified for future consideration as prophylactic and therapeutic agents.

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

DATE
February 2006

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

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

PROJECT
TC2

FY 2005 Accomplishments (Cont):

- 6695 Mustard Gas Antidote Research STIMAL - Continued studies on mustard inhalation models to evaluate efficacy of anti-oxidant liposomes in protection of the respiratory tree. Evaluated additional pharmacogenically-based drugs and complement blockade compounds for vesicant agent therapies.

Total 7687

FY 2006 Planned Program:

- 2526 Mustard Gas Antidote.

Total 2526

	FY 2005	FY 2006	FY 2007
Diagnostics	738	1757	1486

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2005 Accomplishments:

- 738 Diagnostic Technologies - Conducted applied research aimed at improving detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure. Applied assessment of a non-invasive immunodiagnostic test detecting sulfur mustard skin exposure before the onset of vesication to the proven dermatological practice of skin tape stripping. Compared alternate sample/collection technologies; initiated research examining gas chromatography mass spectrometry (GC-MS)/solid phase micro-extraction as a simple and quick screen to verify exposure to Chemical Warfare Agent (CWA) using simulated urine. Completed laboratory validation of a DoD developed whole blood cholinesterase assay for organophosphate exposure and accumulated data comparing this method to classical standard techniques.

Total 738

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2006 Planned Program:

- 608 Diagnostic Technologies - Continue applied research experiments aimed at improving detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure. Finalize assessment of a noninvasive immunodiagnostic test detecting sulfur mustard skin exposure before the onset of vesication to the proven dermatological practice of skin tape stripping. Further develop alternate sample collection/extraction technology(s); complete research examining gas chromatography mass spectrometry (GC-MS)/solid phase micro-extraction as a simple and quick screening method to verify exposure to CWA in simulated urine. Using the DoD developed whole blood cholinesterase assay for organophosphate exposure, assess a healthy population with no known exposure for known test marker inhibitors and atypical marker phenotypes. Establish baseline studies for assay development for additional selected chemical agents to include preparation of standard curves, linearity and limits of detection/quantitation studies.
- 1149 Animal Models - Conduct animal studies for detecting biomarkers of CW agent exposure in biological samples; explore longevity of biomarkers for the sulfur mustard blood protein adduct assay and fluoride reactivation assay by utilizing/interfacing with ongoing relevant animal exposure models. Assess ability of immunohistological and specialized protein detection techniques to detect sulfur mustard-induced skin changes in relevant animal models.

Total 1757

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

DATE **February 2006**

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

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

PROJECT
TC2

FY 2007 Planned Program:

- 486 Diagnostic Technologies - Accelerate applied research experiments aimed at improving detection methods in clinical samples for metabolites, adducts and/or relevant biomarkers resulting from chemical warfare exposure. Continue to adapt the DoD developed whole blood cholinesterase assay for organophosphate exposure to automation/high throughput; conduct experiments examining changes in marker profiles after exposure to low level amounts of nerve agents and organophosphate pesticides; 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.
- 1000 Animal Models - Continue to conduct animal studies for detecting biomarkers of CW agent exposure in biological samples; complete studies exploring the longevity of biomarkers. Initiate metabolic profile (metabonomic) studies by examining blood from agent exposed guinea pigs and assess feasibility as a potential diagnostic technique.

Total 1486

	FY 2005	FY 2006	FY 2007
Emerging Threats	6192	2959	0

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2005 Accomplishments:

- 2605 Chemical Warfare Agent Defense, Low Level CW agents Exposure: Effects and Countermeasures (DTO CB51) - Completed assessments of the short-term effects of VX nerve agent on higher order behavioral tasks in non-human primates following a range of low-dose exposures for varying durations to improve estimates of impact on human operational readiness. Completed initial species and route integration studies that provide a basis for more accurate extension of results to human military operational risk assessment.
- 3587 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Evaluated the effectiveness of anticonvulsants against seizures produced by NTAs, in vivo (inside the organism) persistence of NTAs, and current medical countermeasures against NTAs. Conducted evaluation of respiratory dynamics and lung biochemistry.

Total 6192

FY 2006 Planned Program:

- 2959 Non-Traditional Agent Medical Countermeasures - Compare non-traditional and conventional nerve agents for induction of neurochemical changes. Evaluate countermeasures against non traditional cytokine agents (e.g. effect on inflammation reaction and bronchoconstriction). Identify target molecules for intervention against peptide NTAs and additional convulsant agents. Initiate development of animal model for peptide NTAs.

Total 2959

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

DATE
February 2006

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

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

PROJECT
TC2

	FY 2005	FY 2006	FY 2007
Pretreatments	3504	4931	8933

FY 2005 Accomplishments:

- 482 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Screened anti-cyanide compounds for efficacy. This project area was terminated due to budgetary considerations and lack of research progress.
- 3022 Nerve Agent, Bioscavengers - Completed development of transgenic animals that can produce sufficient amounts of recombinant enzyme scavengers for clinical trials. Completed feasibility testing of vector/gene combinations to validate the concept of gene therapy for bioscavengers. Continued pretreatment intervention studies of vectors to deliver bioscavenger genes.

Total 3504

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2006 Planned Program:

- 4931 Nerve Agent, Bioscavengers - Continue pretreatment intervention studies of vectors to deliver bioscavenger genes. Develop genetic knock-out murine animal models for catalytic bioscavenger studies (Block II). Evaluate different delivery systems for administration of recombinant and/or catalytic bioscavengers in vivo (Block II). Develop procedures and systems for large scale purification of recombinant bioscavengers (Block II). Expand the evaluation of human protein catalytic bioscavengers. Evaluate 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.

Total 4931

FY 2007 Planned Program:

- 8933 Nerve Agent, Bioscavengers - Evaluate recombinant methods and expression systems for larger scale production and purification of recombinant and catalytic bioscavenger proteins (Block II). Perform initial evaluation studies of catalytic bioscavenger molecules in genetic knock-out mice. Continue to develop knock-out murine models for evaluation of recombinant and catalytic bioscavenger molecules. Accelerate the determination of 3-D structure of human bioscavenger proteins. Determine efficacy of catalytic bioscavenger molecules against all types of nerve agents using inhalation toxicokinetics. Continue development of peptide drugs as potential bioscavenger molecules. Identify new native/recombinant catalytic bioscavengers molecules. Develop methods to improve/modify the catalytic efficiency of selected bioscavenger molecules. Develop more efficient delivery formulation. Develop methods(s) to significantly reduce or eliminate the inherent immunogenicity of recombinant bioscavenger molecules.

Total 8933

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

DATE
February 2006

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

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

PROJECT
TC2

	FY 2005	FY 2006	FY 2007
Therapeutics	6305	11255	20263

FY 2005 Accomplishments:

- 964 Nerve Agent Defense, Improved Oxime (DTO CB48) - Completed assay development and stability studies. Completed the identification and characterization of a surrogate marker for efficacy of candidate oxime(s) for use against traditional nerve agents and Non Traditional Agents.
- 579 Nerve Agent Defense, Nerve Agent Anticonvulsants - Evaluated efficacy of combinations of midazolam with selected anticholinergic compounds against nerve agent seizures in rodent (guinea pig) and relevant animal models. Developed analytical method to detect therapeutic levels of the anticholinger compound scopolamine in blood and tissue. Continued to develop a method to directly assay atropine levels in blood. Assessed application of emerging therapy for organophosphate insecticide poisoning to nerve agent exposure. Continued testing of drug combinations against seizures and lethality produced by all current threat agents.
- 434 Nerve Agent Defense, Neuroprotection - Tested putative neuroprotectants in animal model. Investigated potential markers for neuroprotectant effects (e.g., Electroencephalography (EEG) power spectrum, pulse oximetry, neuroimaging). Developed and validated a neurobehavioral model for change in ability to carry out complex behavior after recovery from nerve agent toxicity.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2005 Accomplishments (Cont):

- 1263 Vesicant Agent Defense, Vesicant Medical Countermeasures - Collated available industrial documentation. Strengthened technology transfer mechanisms. Developed in vivo/in vitro models. Procured compounds for screening modules. Initiated screening procedures. Prioritized screened compounds. Selected compounds for further safety and efficacy evaluation.
- 1929 Vesicant Agent Defense, Cutaneous Therapeutics - Completed development of a superficial dermal vesicant injury model in weanling pigs. Began development of a sulfur mustard cutaneous wound healing model using African green monkeys for advanced efficacy studies of promising treatment regimens. Completed development of an in vitro wound healing model using human epidermal keratinocytes to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries. Began development of an in vitro wound healing model using porcine epidermal keratinocytes for use as a bridge between in vitro studies using human epidermal keratinocytes and in vivo studies using weanling pigs. Evaluated additional commercially available wound healing products for their efficacy in promoting improved healing of superficial dermal sulfur mustard injuries using a validated weanling pig model.
- 482 Chemical Warfare Agent Defense, Inhalational Therapeutics - Established in-house and collaborative research programs to investigate therapy for multiple agent exposure.
- 654 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Completed comparison of the efficacy of Reactive Skin Decontamination Lotion (RSDL) versus the Gordon polyurethane sponge against challenge by nerve agent GD. Initiated similar studies with challenge by nerve agents VX and HD. Initiated the efficacy evaluation of the Gordon polyurethane sponge with added nucleophiles challenged by nerve agent HD. Determined the efficacy of the M291 Skin Decontamination Kit challenge by VX.

Total 6305

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2006 Planned Program:

- 1188 Nerve Agent Defense, Improved Oxime - Utilize current and novel approaches to conduct 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.
- 2000 Nerve Agent Defense, Nerve Agent Anticonvulsants - Evaluate the efficacy of new novel anticonvulsant compounds against nerve agent-induced seizures using in vivo models. Determine efficacy of midazolam, and/or anticholinergic compounds against nerve agent-induced seizures and lethality. Continue to assess pharmacokinetics of lead anticonvulsants against organophosphates.
- 2670 Nerve Agent Defense, Neuroprotection - Develop and refine screening protocol for candidate down-select. Refine animal models and validate small and large animal neurobehavioral test batteries. Investigate long-term neuroprotective strategies, including the role of steroid hormones.
- 1600 Vesicant Agent Defense, Vesicant Medical Countermeasures - Refine in vitro tissue and in vivo animal models. Study multi-photon imaging as a therapeutic modality.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2006 Planned Program (Cont):

- 2000 Vesicant Agent Defense, Cutaneous Therapeutics - Complete development of advanced animal injury models, including (1) a sulfur mustard wound healing model using African green monkeys 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. Use 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. Assess instrumentation to evaluate depth of cutaneous vesicant injury, for use as a prognostic indicator.
- 500 Chemical Warfare Agent Defense, Inhalation Therapeutics - Refine and integrate animal models with screening protocols for therapeutics studies, including the novel use of macrolide antibiotics to protect against lung injury.
- 700 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Evaluate the effectiveness of new commercial skin decontamination formulations to agent challenge as a function of time. Continue development of a decontaminating wound product(s) that can be applied before or after exposure, and can be used in and around the eyes and wounds.
- 597 Animal Models - Develop a non-human primate percutaneous testing model for chemical warfare agent exposure. Initiate assessment of 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. Evaluate the African green monkey, and the Marmoset, as alternate non-human primate models by: determining the toxicity of nerve agents sarin, tabun, cyclosarin, VX, VR, and selected non-traditional agents (NTAs); determining the efficacy of currently licensed medical countermeasures against this panel of chemical warfare agents.

Total 11255

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 2007 Planned Program:

- 9045 Therapeutics, Neurologic - Use current and novel approaches to explore potential broad spectrum reactivators to nerve agent challenge. Synthesize prospective candidate reactivators and conduct reactivation studies to determine efficacy and toxicity in vitro/in vivo. Determine the optimal therapy for effective treatment of seizures under all potential field conditions (immediate or delayed treatment). Expand evaluation of putative neuroprotectants that have demonstrated effectiveness in neuronal rescue particularly Food and Drug Administration (FDA)-approved products which may have additional neuroprotective activity.
- 4421 Therapeutics, Cutaneous and Ocular - Complete efforts to develop in vitro tissue assays and design screening protocol(s) to down-select candidate compounds. Initiate protocol(s) and screen new/novel compounds using in vitro/in vivo techniques. Refine therapeutic animal and in vitro tissue models. Utilize in vitro/in vivo wound healing models (rodent) to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries. Continue instrumentation assessment to evaluate depth of cutaneous vesicant injury. Begin toxicogenomic studies to characterize the phases of wound healing in the hybrid sulfur mustard-thermal burn model (weanling pigs). Consider novel technologies to replace the M291 skin decontamination kit (SDK), and products that decontaminate wounds, and eyes.
- 5207 Therapeutics, Medical Toxicology - Non Traditional Agents (NTA) and Other Agents - This area will investigate the potential for transient or sustained systemic toxicity resulting from exposure to NTAs and selected chemical warfare agents. Efforts will seek to identify mechanisms of toxicity and to establish a scientifically-defendable quantitative means of predicting consequent health effect in human operators. Emphasis will be on developing computational tools that extend the utility of laboratory data for improving operational risk assessment and countermeasure therapy design.

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

DATE **February 2006**

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

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

PROJECT
TC2

FY 2007 Planned Program (Cont):

- 722 Therapeutics, Respiratory and Systemic - Refine planned animal models to interface with screening protocols. Identify relevant endpoints for in vivo models. Complete studies to identify lead compounds as a medical countermeasure(s) therapy(ies) against multiple agent exposures. Develop screening protocol to evaluate and down-select candidate compounds.
- 868 Animal Models - Continue advanced non-human primate testing for chemical warfare agent exposure. Evaluate alternate models to meet FDA rules in a cost-effective manner.

Total 20263

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	229	0

FY 2006 Planned Program:

- 229 SBIR

Total 229

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

DATE
February 2006

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 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	12125	23863	18893	31812	31656	32621	33785	Cont	Cont

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR2	MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)	0	295	1575	2961	4550	4926	5388	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TR2 MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH): This project funds applied research on the development of pretreatments to provide an effective medical defense against validated radiological threats. Innovative technical approaches and advances will be incorporated to obtain medical systems designed to provide enhanced protection against exposure to radiological threats. 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. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short- and long-term risks of adverse health consequences. Accurate models to predict casualties will promote effective command decisions and force structure planning to ensure mission success. This project addresses the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gap addressed is gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Radioprotectants	0	293	1575

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

DATE **February 2006**

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

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

PROJECT
TR2

FY 2006 Planned Program:

- 293 Radioprotectants - Identify and test, from a prioritized list of approximately 20 agents, two candidates for efficacy in a rodent model; the degree of protection at a radiation dose that normally causes approximately 90% lethality within 30 days (Lethal Dose (LD) 90/30). Develop new pre- and post-exposure treatment products that will protect against and/or mitigate the effects of short- and long-term consequences of external radiation exposure and/or internal contamination with radionuclides. Demonstrate immunomodulators (e.g., cytokines, growth factors, and defensins) and hematopoietic cell transplantation approaches to stimulate innate and adaptive immunological responses and reconstruction approaches to mitigate primary and secondary infections from a weakened immune system.

Total 293

FY 2007 Planned Program:

- 1575 Radioprotectants - Evaluate three to four new compounds for efficacy at the LD 90/30. Assess the more promising candidates to determine the dose-reduction factor (DRF) for radioprotection and develop protocols for evaluation in a non-human primate model system. Demonstrate the efficacy of combined agents that confer protective or palliative effects against all types of radiation with minimal or few toxic side effects. Develop current Good Laboratory Practice (cGLP) capacity test capability and evaluate candidate products in appropriate animal models of radiation-induced syndromes.

Total 1575

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	2	0

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

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

PROJECT
TR2

FY 2006 Planned Program:

- 2 SBIR

Total 2

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TR3 MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	2162	4441	4203	4523	6731	Cont	Cont

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BUDGET ACTIVITY 3
ADVANCED TECHNOLOGY DEVELOPMENT (ATD)

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

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

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	175182	234039	207114	259667	320350	342905	237652	Continuing	Continuing
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	87033	110219	78236	72496	75429	67855	56786	Continuing	Continuing
CM3	HOMELAND DEFENSE (ATD)	3256	0	0	0	0	0	0	0	3256
CP3	COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	67899	88830	96736	143039	200722	229218	131723	Continuing	Continuing
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	12125	23863	18893	31812	31656	32621	33785	Continuing	Continuing
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	2162	4441	4203	4523	6731	Continuing	Continuing
TT3	TECHBASE TECHNOLOGY TRANSITION	0	11127	11087	7879	8340	8688	8627	Continuing	Continuing

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

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

A. <u>Mission Description and Budget Item Justification:</u> 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.

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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 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		181972	164481	149428
Current Biennial Budget Estimate (FY 2007)		175182	234039	207114
Total Adjustments		-6790	69558	57686
a. Congressional General Reductions		-141	-3392	0
b. Congressional Increases		0	72975	0
c. Reprogrammings		-5158	0	0
d. SBIR/STTR Transfer		-1491	0	0
e. Other Adjustments		0	-25	57686

Change Summary Explanation:

Funding: FY06 - Congressional increases to enhance projects within the science and technology base (+$47,925K CB3; +$25,050K TB3). Congressional general reductions and other adjustments (-$1,332K CB3; -$1,344K TB3; -$500K TC3; -$241K TT3). Reprioritization of programs within BA3 projects to support higher priority efforts (+$2,839K CB3; +$2,000K TB3; -$4,839K TT3).

FY07 - Increase to enhance Medical Biological research efforts in support of the Transformational Medical Technology Initiative which focuses on broad-spectrum defenses against intracellular bacterial pathogens and hemorrhagic fevers (+$59,400K TB3). Defense-wide directed offsets (-$2,367K CB3; -$1,143K TB3; -$592K TC3; -$68K TR3; -$430K TT3). Inflation adjustment (+$1,053K CB3; +$1,348K TB3; +$263K TC3; +$30K TR3; +$192K TT3).

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

Schedule: N/A

Technical: N/A

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	87033	110219	78236	72496	75429	67855	56786	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.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	51471	47465	0

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

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

PROJECT
CB3

FY 2005 Accomplishments:

- 2579 Detecting Contaminants in Drinking Water - Analyzed, tested and developed prototype CBRN and TIC/TIM sample concentration and detection 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 and Toxic Industrial Chemicals (TICs).
- 992 Dual Use Detection Technology for Sick Building Syndrome - Developed sensors for internal monitoring of buildings for the detection of hazardous materials in the event of terrorism and sick building syndrome.
- 3372 Handheld Biosensor and Continuous Monitor for Biodetection - Developed optically based sensors for use as handheld systems for the detection of biological materials.
- 992 National Testbed for Rescue Robotics - Developed test facilities for evaluating and assessing the performance of small robotics devices in surveillance and hazardous environments.
- 2579 Water Quality Sensors - Developed a prototype hand-held, self-powered instrumentation system to analyze effluent water samples for presence of biological and chemical warfare agents or contaminants.
- 992 Adaptation Gaseous and Liquid Technology Decontamination - Evaluated the suitability and use of proven gaseous and liquid decontamination technologies in human decontamination.
- 1984 Advanced Engineered Enzyme Decontamination System - 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.

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

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

PROJECT
CB3

FY 2005 Accomplishments (Cont):

- 8430 Countermeasures to Chemical and Biological Defense/Rapid Response - Developed new models and sensor systems for both medical and environmental application against chemical and biological hazardous materials.
- 2975 E-Smart Threat Agent Network - Demonstrated a network of biological trigger systems to determine the value of data fusion to reduce false alarms and to increase the value of the information that each sensor can provide.
- 1984 Handheld Biological Agent Detection (HBAD) - Developed optically based sensors for use as handheld systems to detect biological materials.
- 992 Hi-Int Pulsed Radiation for Chemical and Biological Agent Defeat - Installed linear accelerator used to determine effective kill doses of radiation required to kill biological agent simulants or destroy chemical agent simulants.
- 2281 Immunochemical Biological/Chemical Threat Agent Detector - Developed a multiplex, micro-array system based on both antibodies and nucleic acid type assays.
- 1686 Industry-Based Research to Miniaturize Chemical and Biological Detectors (Continuation only) - Developed new production methods for solid state components used in the sensor systems.
- 4166 Laser Interrogation of Surface Agents (LISA) Inspector - Developed a handheld Raman spectroscopy base system for the detection of contaminants on surfaces, primary focus is for detecting contamination on equipment or internal compartments.
- 1190 Polymer-Based Bio Mems - Developed sensor elements based on polymer films to act as molecular recognition moieties and serve as a potential replacement for antibodies.

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

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

PROJECT
CB3

FY 2005 Accomplishments (Cont):

- 992 Protection Against Toxic Industrial Chemical - Continued development and validation of TIC list. Evaluated the protection provided by current protective materials against identified TIC threats.
- 1736 Rapid Response Bio-Chem Decontamination, Liquid and Dry (Decon Green) - Optimized proven liquid and dry process decontamination technologies, packaging and delivery systems for rapid deployment in biological and chemical incidents.
- 992 Rapid Response Database Systems Center - Developed 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.
- 992 Rapid Response Sensor Networking for Multiple Applications - Refined the sensor and network design leading to a demonstration of the integrated network for detection and early warning.
- 5554 Reactive Air Purification for Individual and Collective Protection (RAPICP) - Completed the advanced media selection and the design of pre-industrialized test articles (full canisters) to be tested for performance and consistency. Initiated a controlled production run of two hundred (200) units in order to perform FY06 field evaluation and obtain feedback from military personnel. Continued the development of the 2'x2' advanced Triosyn COLPRO anti-microbial pre-filter as well as develop a new advanced, LPD integrated, stand alone HEPA-like/antimicrobial filter for COLPRO applications. Developed an advanced Triosynated membrane and improved pre-filter/filter design.

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

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

PROJECT
CB3

FY 2005 Accomplishments (Cont):

- 2777 Removal of NBC Agents in Drinking Water - Analyze, test and developed prototype CBRN and Toxic Industrial Chemicals (TICs) removal technologies for use in-line with existing water purification units, and conduct research to determine water purification units performance in the removal of high threat CBRN agents and TICs.
- 447 Chemical Biological Defense Program Initiative Fund.
- 787 Supported integration efforts to combat Weapons of Mass Destruction including capabilities-based assessments and synchronization of DoD efforts with other agencies.

Total 51471

FY 2006 Planned Program:

- 991 Cooperative Unmanned Ground and Aerial Vehicle Incubator.
- 991 LISA-JCSD Solid-State Laser Technology.
- 991 Novel Sample Concentration Technologies for Contaminant Detection in Drinking Water.
- 991 Portable Rapid Bacterial Warfare Detection Unit.
- 991 Rapid Response Database Systems - Continue 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.
- 1189 Chemical Biological Defense Program Initiative Fund - Hackensack University Medical Center.

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

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

PROJECT
CB3

FY 2006 Planned Program (Cont):

- 1486 Small Accelerators and Detection Systems.
- 1783 Personnel Decontamination Using Liquid Technology.
- 1981 Advanced Engineering Enzyme Decontamination Systems - Develop 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 Notre Dame Center for Environmental Networked Embedded Sensor Technology (ND-CENEST).
- 2080 Self-Detoxifying Materials in CB Clothing.
- 2105 Industry-Based Research to Miniaturization Chemical and Biological Detectors - Continue development of new production methods for solid state components used in the sensor systems.
- 2377 Immunological Biological/Chemical Agent Detector - Develop a multiplex, micro-array system based on both antibodies and nucleic acid type.
- 2773 Removal of NBC Agents in Drinking Water - Continue to analyze, test and develop prototype CBRN and Toxic Industrial Chemicals (TICs) removal technologies for use in-line with existing water purification units, and conduct research to determine water purification units performance in the removal of high threat CBRN agents and TICs.
- 2971 Hand-Held Biological Agent Detection (HBAD) System - Develop an optically based sensors for the use as handheld systems for the detection of biological materials.

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

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

PROJECT
CB3

FY 2006 Planned Program (Cont):

- 3367 Hand-Held Biosensor and Continuous Monitor for Biodetection - Develop optically based sensors for the use as handheld systems for the detection of biological materials.
- 5545 Reactive Air Purification for Individual and Collective Protection.
- 5941 NIDS Hand-Held Biological Detectors.
- 6931 Chemical Biological Defense Program Initiative Fund.

Total 47465

	FY 2005	FY 2006	FY 2007
Technology Readiness Assessment	4204	0	0

FY 2005 Accomplishments:

- 4204 Technology Readiness Assessment - Initiated Technology Readiness Evaluation (TRE) of Collective Protection Equipment. In FY06, efforts will be included in Project TT3 - Techbase Technology Transition.

Total 4204

	FY 2005	FY 2006	FY 2007
Technology Transition	0	4835	5052

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BUDGET ACTIVITY
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BA3 - Advanced Technology Development (ATD)

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

PROJECT
CB3

FY 2006 Planned Program:

- 1680 Technology Transition - Initiate competitive assessment of all mature technologies from areas outside of the Chemical Biological Defense Program for rapid technology insertion into the capability areas from MIT Lincoln Laboratory survey of the nano-technology industry.
- 3155 Transition of 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 target is to produce systems in the $1000 range to allow wide spread deployment of the systems to provide an early warning capability. The technology is expected to transition to the Joint Biological Tactical Detection System and the DHS Low-Cost Biological Aerosol Detection System with an Advanced Technology Demonstration in early FY08.

Total 4835

FY 2007 Planned Program:

- 5052 Technology Transition - Continue competitive assessment of all mature technologies from areas outside of the Chemical Biological Defense Program for rapid technology insertion into the capability areas of detection, decontamination, detection, and protection that support Joint Service Programs of Record.

Total 5052

	FY 2005	FY 2006	FY 2007
Decontamination	1854	1970	4781

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

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

PROJECT
CB3

FY 2005 Accomplishments:

- 1854 Decontamination, Oxidative Formulation (DTO CB44) - Completed safety, health and environmental studies. Completed live agent chamber testing and determine which candidates meet efficacy requirements. Demonstrated limited operational utility of down-selected decontaminants and associated applicators using simulant field trials in relevant environments, and determined which candidates meet efficacy and operational requirements. Completed DTO and supported Joint Service Transportable Decontamination Systems (JSTDS), and Joint Portable Decontamination System (JPDS) requirements.

Total 1854

FY 2006 Planned Program:

- 1245 Decontamination, Solutions Chemistry - Develop and select peracetate solvent peroxide-based decontaminants with proper transport, storage, and efficacy and recommend transition to developmental program to support JPDS and Joint Service Transportable Decontamination System (JSTDS) (small and large scale); and initiate new research on transportation, storage, and use of hydrogen peroxide for decontamination to support JPDS and Joint Platform Interior Decontamination (JPID).
- 725 Decontamination, Solid Phase: - Complete laboratory scale (large panel) testing of solid sorbent based on nanocrystalline metal oxides to support Joint Service Transportable Decontamination System (JSTDS) (small and large scale).

Total 1970

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
CB3

FY 2007 Planned Program:

- 2188 Decontamination, Solutions Chemistry - Complete chamber testing on chlorine dioxide-based JPDS candidates and recommend transition to developmental program; and continue research on transportation, storage, and use of hydrogen peroxide for decontamination to support Joint Service Transportable Decontamination System (JSTDS) (small and large scale).
- 1405 Decontamination, Solid Phase - Conduct enhanced 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 Joint Service Transportable Decontamination System (JSTDS) (small and large scale).
- 1188 Decontamination, Alternative Process - Continue research to develop a gaseous chemical and biological decontamination system combined 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 Joint Platform Interior Decontamination (JPID).

Total 4781

	FY 2005	FY 2006	FY 2007
Detection	27730	20731	20466

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

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

PROJECT
CB3

FY 2005 Accomplishments:

- 1290 Testing and Trials - Hot Lightweight Chemical Detector (LCD) BCA# 20/31/33- Initiated efforts to characterize and assess the performance of a breadboard (heated inlet version of the United Kingdom fielded LCD) against non-traditional agents and traditional agents. The breadboard assessment is the basis for the design and build of a prototype that will be assessed for transition suitability to the acquisition program Joint Chemical Agent Detector (JCAD).
- 4352 Detection Test Capabilities for Non-Traditional Agents BCA# 33 - Initiated development of agent to simulant correlations in support of detection T&E needs. Conducted analytical studies on the impact of threat environments on the properties of neat agents. Developed facility for detector testing of NTAs.
- 5690 Lightweight Integrated CB Detection (DTO CB50) BCA# 3/4/21/31 - Down-selected technologies to the best three approaches for pyrolysis-GC-IMS. Prepared preliminary design concepts based on these approaches.
- 4820 Chemical/Biological Agent Water Monitor (DTO CB37) BCA# 31 - Completed prototype build for biological detection requirements and assessment methodology. Continued development of chemical detection portion of the program with an objective of a Milestone A in FY06.
- 1990 Point Detection, Biological Identification BCA# 21 - Initiated micro-array concept for high throughput laboratory bio detection/identification. Completed prototype build for an automated antibody multiplex assay system with reader to reduce consumable cost for Joint Biological Point Detection System (JBPDS).

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

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

PROJECT
CB3

FY 2005 Accomplishments (Cont):

- 1990 Laser Induced Surface Analysis (LISA) Prototype BCA# 28 - Assessed the performance of the first generation detection algorithm under operational environments. Developed the second generation detection algorithm based on the assessed shortfalls of the first generation algorithm. Supported transition of technology into Chemical Unmanned Ground Reconnaissance (CUGR) Advanced Concept Technology Development (ACTD).
- 3546 System Performance Modeling BCA# 7/10/21 - Conducted analytical feasibility studies on the technical parameters in the detection of CB contamination on surfaces in post decontamination applications. Initiated the development of databases containing spectral infrared backgrounds suitable for standoff applications (includes imaging techniques). Conducted analytical feasibility studies on the minimum acceptable technical parameters for a stand-alone low cost/low power biological trigger system for early warning.
- 1595 Stand-off, Sensor Assessment Non-Traditional Agent (NTA) BCA# 33 - Completed spectral database of NTAs. Completed enhancements of physics based performance models to include NTAs for the assessment of fielded and developmental systems to detect and identify NTAs.
- 2000 Technology Readiness Assessment - Initiated Technology Readiness Evaluation (TRE) of detection equipment.
- 457 Chemical Biological Defense Program Initiative Fund.

Total 27730

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

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

PROJECT
CB3

FY 2006 Planned Program:

- 4567 Point Detection, Biological Identification - Complete and demonstrate transition into micro-array system for high throughput laboratory biological detection/identification. Demonstrate the prototype for an antibody multiplex assays system for Joint Biological Point Detection System (JBPDS) technology insertion.
- 5500 Lightweight Integrated CB Detection (DTO CB50) - Assess 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. Initiate fabrication of brassboards. Develop a UV florescence detector that exploits Semiconductor Ultra Violet Optical Sources (SUVOS) developed by DARPA as a competing technology for JBTDS.
- 3600 Chemical/Biological Agent Water Monitor (DTO CB37) BCA# 31 - Complete the development of the chemical detection portion of the requirements. Demonstrate and conduct a Milestone A at the end of FY06 on the chemical requirements. Complete, demonstrate, and conduct a Milestone B for the advanced prototype for the biological detection requirements by the end of FY06. The DTO supports the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM).
- 1250 System Performance Modeling BCA# 1/28 - Complete the database development of infrared spectral backgrounds. Conduct and finalize 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 Stryker vehicle program.

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
CB3

FY 2006 Planned Program (Cont):

- 3454 Detection Test Capabilities for Non-Traditional Agents BCA# 33 - Continue the development of agent to simulant correlations in support of T&E needs. Initiate the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agents. Priority will be for biological materials followed by chemical materials.
- 1000 Biological Stand-off Technology BCA# 1 - Initiate the development of test methodology to evaluate and assess the value of new signatures in board regions of the electromagnetic spectrum. Initiate development of a prototype system.
- 1360 Chemical Stand-off Technology BCA# 7/10 - Initiate 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.

Total 20731

FY 2007 Planned Program:

- 5231 Lightweight Integrated CB Detection (DTO CB50) BCA# 3/4/21/31 - Demonstrate the technology and transition for technology insertion into Joint Biological Point Detection System (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.
- 7721 Lightweight Imaging System for Reconnaissance BCA# 7/10/28 - Initiate the development of a prototype system based on the enabling technology demonstration from DTO CB52. Continue the development of a prototype system that meets the requirements from the analytical feasibility system conducted in FY06 for an on-the-move capability for biological standoff on a mobile reconnaissance platform.

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

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

PROJECT
CB3

FY 2007 Planned Program (Cont):

- 3644 Detection Test Capabilities for Non-Traditional Agents BCA# 33 - Continue the development of agent to simulant correlations in support of T&E needs. 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. Priority will be for biological materials followed by chemical materials.
- 2070 Chemical Stand-off Technology BCA# 7/10 - Continue 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.
- 1800 Biological Stand-off Technology BCA# 1 - Continue the development of test methodology to evaluate and assess the value of new signatures in broad regions of the electromagnetic spectrum.

Total 20466

	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	1300	7032	10147

FY 2005 Accomplishments:

- 750 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA# 5/6 - Transitioned advanced predictive capabilities (MESO) to Joint Effects Model (JEM) program. Enhanced the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.

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

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

PROJECT
CB3

FY 2005 Accomplishments (Cont):

- 450 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA# 5/6/8/9 - Tested and transitioned DTO efforts to Joint Operational Effects Federation (JOEF) Block II. Performed internal Verification and Validation.
- 100 Battlespace Management BCA# 8/9 - Developed a shared Common Operating Picture (COP) in support of Joint Warning and Reporting Network (JWARN).

Total 1300

FY 2006 Planned Program:

- 1100 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA# 5/6/8/9 - Conduct a current capability demonstration of sensor siting around a selected DoD facility. Conduct a data model study and initiate the web-services component of the IMPACT model framework. Demonstrate automated CBRN data import/export tool for use with the Joint Operational Effects Federation (JOEF) prototype.
- 3231 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA# 5/6 - Complete DTO CB55. Transition CBW-CFX capabilities to the Joint Effects Model (JEM) program. Restructure the RUSTIC model for installation of the SOC model. Conduct a current capability demonstration of sensor sites around a selected DoD facility. Improve ruggedization and testing and evaluation in the GEDIS 2.0 release. Perform sensitivity and uncertainty analysis for the atmospheric chemistry of the Toxic Industrial Chemicals (TICs) database.

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

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

PROJECT
CB3

FY 2006 Planned Program (Cont):

- 1701 Battlespace Management BCA# 2/3/4/8/9 - Enhance enterprise level definition, development, release and transition of fully developed RPM capability. Provide integrated demonstration and assess user feedback on the Common Operating Picture (COP) for HLS and HLD. Demonstrate in a simulated environment the Inter-LAN socket connection manager. Conduct live real-time demonstration of JWARN Compliant Interface Device (JCID) compliance on examples of fielded JWARN sensors. Produce final report, user manual and prepare to transition JCID compliant thin server technology. Field test the intelligent agent decision design for next generation CB battle management.
- 1000 CBDP Decision Capability BCA# 1-39 - Design and develop a common user graphic user interface (GUI) for the CB Simulation Suite. Develop data and documents for independent verification and initiate verification activities.

Total 7032

FY 2007 Planned Program:

- 2690 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA# 5/6/8/9 - Test and verify the Simulated Training and Analysis for Fixed Facilities/Sites (STAFFS) and CONTAM 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.

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PROJECT
CB3

FY 2007 Planned Program (Cont):

- 2316 Chemical and Biological Hazard Environment Prediction (non-DTO) BCA# 5/6 - Develop the surface heat flux model for water. Verify the model and test the code for speed enhancements. Enhance sensor siting tool to include DoD defined siting metrics. Develop a second generation siting tool and demonstrate. Include more data types, tailor application support and canopy parameterizations in the GEDIS 2.1 release. Conduct lab-scale validation of Toxic Industrial Chemicals (TICs) chemistry model. Develop methodology for undefined TICs.
- 2974 Battlespace Management BCA# 2/3/4/8/9 - Demonstrate increased maturity and readiness of the Inter-LAN socket connection manager for transition to the Joint Warning and Reporting Network (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.
- 2167 CBDP Decision Capability BCA# 1-39 - 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.

Total 10147

	FY 2005	FY 2006	FY 2007
Protection	474	8462	8797

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PROJECT
CB3

FY 2005 Accomplishments:

- 474 Collective Protection, Air Purification - Assessed the impact of pollutants on aerosol/particulate filters and transitioned to the Joint Expeditionary Collective Protection (JECP) Program. Completed development and demonstrated an advanced electrically-enhanced filter that will produce the same results found in breadboard prototypes.

Total 474

FY 2006 Planned Program:

- 1771 Advanced Air Purification System Model (DTO CB61) - Initiate assessment of advanced COTS and developmental air purification systems. Measure laboratory- scale design and platform application integration data to evaluate these configurations. Design Advanced Air Purification system configuration for one platform application.
- 1100 Improved Single-Pass Filters - Optimize polishing sorbent material and measure design data for CWA/TIC. Integrate ammonia filtration material into current filters. Demonstrate polishing sorbent for CP filters (M98) and transition. Integrate Residual Life Indicator system with COLPRO filter/blower system and perform validation testing. Demonstrate candidate residual life indicators in operational filtration systems.
- 1299 Regenerative and Reactive Air Purification - Demonstrate catalytic-based air purification applications by incorporation of commercial or newly developed catalysts for chemical, biological and TICs destruction. Develop a breadboard system with optimized catalyst, post treatment filter, and thermal management. CATOX and regenerative air purification will transition through DTO CB61, EFV ATD and FY08 JECP TRE.
- 900 Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating - Demonstrate Expedient COLPRO Coatings proof-of-concept for tentage applications.

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PROJECT
CB3

FY 2006 Planned Program (Cont):

- 1792 Shelter Systems - Analyze COLPRO TRE results and identify and document critical sub-system components and interface/integration issues requiring S&T. Acquire sub-system demo components, address interface/integration issues, assemble and test sub-system. Down-select and fabricate prototypes from sub-systems. Conduct physical performance testing on prototypes integrated as full COLPRO systems.
- 1600 Self-Detoxifying Materials for CB Protective Clothing (DTO CB45) - Manufacture prototype garments containing reactive nanoparticles. Measure chemical/aerosol breakthrough of garments. Conduct field testing. Collect user assessments. Conduct CWA simulant and live CWA testing on worn garments to assess durability. Technologies resulting from this effort are applicable to future protection ensemble.

Total 8462

FY 2007 Planned Program:

- 2859 Advanced Air Purification Systems Model (DTO CB61) - 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. Transition initial version of AAP Systems Model for FY08 TRE.
- 1150 Improved Single-Pass Filters - 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 and transition to JECP FY08 TRE.

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FY 2007 Planned Program (Cont):

- 550 Shelter Materials, Coatings and Materials Treatments, Reactive or Self-Decontaminating - Apply expedient and reactive coatings to current general-purpose tent fabric as after-treatment and test for transition to JECP FY08 TRE.
- 2138 Shelter Systems and CCA/Airlock/TFA (CCAATFA) - 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/Tedlar/Polyester fabric and conduct a systems simulant test. Fabricate CCAATFA prototypes and test (simulant). Conduct shelter system tech demo/testing for transition to JECP FY08 TRE.
- 2100 Self-Detoxifying Materials for CB Protective Clothing (DTO CB45) - 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. Technologies resulting from this effort will support future protective ensembles.

Total 8797

	FY 2005	FY 2006	FY 2007
Test and Evaluation	0	18649	28993

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FY 2006 Planned Program:

- 1600 Standardized Procedure for IPE Assessment - Initiate development of real-time sampling/detector system swatch (for use in Chemical and Biological Agent Resistance Test System) and system (for use in Man-in-Simulant Test System). Initiate protocol development for Protective Ensemble Test System.
- 535 IPE Field Operations Effects Standard - Develop pressure suit concepts and conduct initial test and evaluation for use in assessing field operations effects on garments.
- 817 Development of Standardized Collective Protection (COLPRO) Shelter Systems Protective Test Evaluation Standards - Develop conceptual biological test operating procedures. Draft initial procedures and protocol for chemical, biological, and aerosol testing of collective protection systems.
- 600 IPE Airflow Mapping - Quantify driving forces influencing air and agent transport inside the garment/mask. Initiate model to predict airflow within the ensemble, and develop test apparatus to validate the model.
- 1806 Test Standard Development for Protection Technologies - Develop Concepts For filtration and air purification system test method development. Initiate development of test apparatus for the conduct of evolving test methods.
- 1000 TIC/Battlefield Contaminant Set Standard for IPE and COLPRO - Establish TIC and battlefield contaminant lists and down-selection process, and initiate swatch and filter test methods development. Initiate test methodology IP systems/MIST aerosol, COLPRO component and whole systems.
- 1600 Measurement of Natural Interferent Transients (MONITR).
- 1380 Range Test Validation System.

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FY 2006 Planned Program (Cont):

- 315 Chemical Detector Testing with NTAs in the McNamera Glove Box Facility.
- 300 Optical Acceptance Measurements for Test & Evaluation Antigens.
- 1600 CRP Antigen Variability Research.
- 510 Overarching Contamination Avoidance Model for Test and Evaluation.
- 1132 CREATIVE Decontamination Efficacy Prediction Model.
- 750 Overarching Collective Protection (COLPRO) Model for Test and Evaluation.
- 450 Achieving Low-Level Detection of Residual Agent and Reaction Products.
- 2801 Decon Hazard Byproduct and Residual Agent Test Standards.
- 400 Simulants for Protective Equipment Testing
- 541 Engineered Aerosol Production for Laboratory-Scale Chemical and Biological Test and Evaluation.
- 512 Aerosol Cloud Production and Droplet Delivery technology Protocol.

Total 18649

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PROJECT
CB3

FY 2007 Planned Program:

- 2067 Joint Expeditionary Collective Protection (JECP) - Modeling and Simulation - Construct prototype model, leverage legacy models, commence validation, verify model via test data, prepare validation reports, and acquire accreditation.
- 4350 JECP - Advanced Technologies Tests - Continue construction of test fixtures and commence testing of fixtures for RLI, filtration-systems, materials, seams and enclosures fixtures.
- 6187 JECP - Advanced Technologies Tests - Validate RLI, filtration and materials, seams and enclosures fixtures.
- 2900 JECP - Simulant Platform Tests - Develop testing and evaluation methods and procedures for non-vapor threats, e.g., aerosols, rains, and other emerging threats.
- 1900 Decontamination System Battlefield Test Conditions, Evaluation and Methodology - Procure instrumentation for field decontamination assessment and measurements. Commence testing to validate performance of current methods under battlefield conditions.
- 3800 Individual Protective Equipment (IPE) Bio Mask System Chamber Test - Complete modifications for prototype chamber for use with biological materials, toxic industrial materials (TIMs) and non traditional agents (NTAs).
- 2000 IPE Battlefield Test Conditions, Evaluation Methodology - Conduct full-range testing to quantify current performance baselines, initiate development of a field mask testing system, initiate development of field IPE-system test procedures.
- 2000 IPE Overarching Model - Complete model development, commence verification, validation and accreditation as per DoD requirements.

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CB3

FY 2007 Planned Program (Cont):

- 2000 IPE Expanded Simulant System Test - Develop real-time Man-in-Suit Test (MIST) sampler, develop aerosol-challenge test capabilities for MIST chamber.
- 1789 Continue CRP Antigen Variability Research.

Total 28993

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	1075	0

FY 2006 Planned Program:

- 1075 SBIR

Total 1075

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PROJECT
CB3

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA4 CONTAMINATION AVOIDANCE (ACD&P)	50885	31140	1000	8031	12368	5624	0	0	109048
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	15853	24239	25452	26152	15083	14344	26674	Cont	Cont
DE4 DECONTAMINATION SYSTEMS (ACD&P)	16950	998	2000	4517	2577	2278	4002	Cont	Cont

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PE NUMBER AND TITLE
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PROJECT
CM3

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CM3	HOMELAND DEFENSE (ATD)	3256	0	0	0	0	0	0	0	3256

A. Mission Description and Budget Item Justification:

Project CM3 HOMELAND DEFENSE (ATD): This project funds Pre-Systems Acquisition in support of Consequence Management teams around the nation. National Guard Weapons of Mass Destruction Civil Support Teams (WMD CSTs) are being established in every state. These teams were created based upon the Defense Reform Initiative Directive #25 (DRID #25), Integrating National Guard and Reserve Component Support for Response to Attacks Using Weapons of Mass Destruction (WMD). The role of the Civil Support Teams (CSTs) were further codified in the National Security Strategy of October 1998, which builds upon the National Guard's ties to the communities throughout the nation, and its long-standing tradition of responding to national emergencies. The strategy allows the National Guard to provide forces and resources that the emergency manager requires to manage the potentially catastrophic effects of a WMD situation. The National Guard, as the lead organization for military support to local and state authorities, leverages its geographic dispersion across the nation to reduce response times, and allow for the majority of the country to be protected. As a result of Presidential and Secretary of Defense directives, the Department of Defense established the WMD CSTs to rapidly respond in support of a local incident commander to assess a suspected WMD incident scene, advise them of appropriate courses of action that will protect local populations from loss of life, injury, and significant property damage, and facilitate the development of their requests for assistance (RFAs) based on CSTs knowledge of available local, state and federal resources that can assist in the mitigation of a WMD emergency.

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PROJECT
CM3

This program funds the acquisition, validation and testing of commercial off-the-shelf (COTS)/government off-the-shelf (GOTS) components on the existing Table of Distribution and Allowances (TDA) for WMD CSTs as well as those systems or components that are responsive to validated WMD CST requirements. This program also funds the evaluation of new commercial products and capabilities that may meet requirements and may be considered for the WMD CST TDA.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	992	0	0

FY 2005 Accomplishments:

- 992 WMD CST - Center for BioDefense - Conducted component level testing for analytic systems and provide planning support.

Total 992

	FY 2005	FY 2006	FY 2007
WMD-Civil Support Teams	2264	0	0

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PROJECT
CM3

FY 2005 Accomplishments:

- 2264 WMD CST - Conducted component testing of Commercial off-the-shelf (COTS) detection, protections and decontamination equipment.

Total 2264

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA4 CONTAMINATION AVOIDANCE (ACD&P)	50885	31140	1000	8031	12368	5624	0	0	109048
CM5 HOMELAND DEFENSE (SDD)	8754	390	0	0	0	0	0	0	9144
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1313	1536	1533	0	0	0	0	0	4382
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	18200	0	0	0	0	0	0	0	18200

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PE NUMBER AND TITLE
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PROJECT
CP3

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CP3	COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869

A. Mission Description and Budget Item Justification:

Project CP3 COUNTERPROLIFERATION SUPPORT (ATD): The mission of the Counterproliferation Program (CP) is to address shortfalls in the DoD capability to defend against and counter the proliferation of Weapons of Mass Destruction (WMD). By focusing on near term results, the CP accelerates delivery of new tools, equipment, and procedures to combat forces. Under the passive defense pillar, CP enhances the efforts of the CBDP. Efforts include planning and development of Advanced Concept Technology Demonstrations (ACTD), such as the CBRN Unmanned Reconnaissance (CUGR) in addition to Joint Warfighter Experiments (JWE). Beginning in FY06 efforts under this project have moved to project TT3.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
ACTD Planning and Development	2156	0	0

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
CP3

FY 2005 Accomplishments:

- 1156 ACTD-PD - Initiated technology planning for selection of technologies for future ACTD candidates. Initiated planning for the Military Applications in Reconnaissance and Surveillance (MARS) - Manned/Unmanned Aerial Vehicle (M/UAV) experimentation program. Initiated planning for the Chemical Biological Networked Early Warning System (CBNEWS) Advanced Technology Demonstration. Initiated feasibility analyses for a proposed information technology system called Situational Awareness and Response Network (STARNET); first is the feasibility to see the signature of a biological attack amongst the medical surveillance systems data, second is the feasibility of being able to process large amounts of data from medical surveillance, intelligence, environmental sensors, and law enforcement data at a Combatant Commander level on a daily basis for a biological defense fusion cell.
- 1000 ACTD-PD - Initiated the Military Applications in Reconnaissance and Surveillance (MARS) -Unmanned Ground Vehicle (UGV) program testing CBRN detection technologies for use on one man and two man portable UGVs for technology insertion into the CBRN Unmanned Ground Reconnaissance (CUGR) ACTD or the transition program for CUGR ACTDs UGV portion.

Total 2156

	FY 2005	FY 2006	FY 2007
EXPERIMENT AND TECH DEMO (TT3)	2713	0	0

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PROJECT
CP3

FY 2005 Accomplishments:

- 1072 ACTD-PD - Completed planning for CBRN Unmanned Ground Vehicle (CUGV) systems technical testing and integration for the CBRN Unmanned Ground Reconnaissance (CUGR) Advanced Concept Technology Demonstration (ACTD).
- 391 ACTD-PD - Completed integration of technologies for the Biological Network (BIONET) program.
- 1250 ACTD-PD - Evaluated test requirements for Non - Standard Equipment Review Panel testing. Completed testing on a modified M256 kit enabling low volatility agent detection. Completed testing on Pressure Swing Adsorption technology. Completed testing on Infrared Scanning technology enabling the detection of elevated body temperatures in humans.

Total 2713

C. Other Program Funding Summary:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	15853	24239	25452	26152	15083	14344	26674	Cont	Cont
TT3 TECHBASE TECHNOLOGY TRANSITION	0	11127	11087	7879	8340	8688	8627	Cont	Cont

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PROJECT
TB3

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	67899	88830	96736	143039	200722	229218	131723	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB3 MEDICAL BIOLOGICAL DEFENSE (ATD): This project 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 is evaluated so that the most effective countermeasures are identified for development. 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) and licensure processes and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs); science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics and Emerging Threats), directed research efforts; and efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA). Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #22 (Medical Therapeutics - Limited anti-viral/ toxin development), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

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PROJECT
TB3

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Congressional Interest Items	16017	24810	0

FY 2005 Accomplishments:

- 1984 Bioterrorism Preparedness - Educated North Shore- LIJ First Watch Programs Emergency Services on biothreat triggers, deployed new technology to them and then tested the effectiveness of the response procedures through surveillance of phone calls, syndromic data and admissions and laboratory data collected from hospitals and community based physician offices.
- 2777 Anthrax and Oral Plague Vaccine Development - Developed an oral, live bacterial vectoral plague vaccine; initiate a Phase I/II clinical trial to evaluate the immune response.
- 3818 Bioadhesion Research to Combat Biological Warfare -Developed a non-invasive anthrax vaccine and multiagent vaccines targeting anthrax and other pathogens.
- 992 Oral Adjuvants - Developed adjuvants that enhance natural resistance and adaptive immune responses against mucosal pathogens.
- 3471 Plant Vaccine Development - Developed safe and efficacious oral multi-agent vaccines from plant-based anthrax and plaque platforms and developed an immediate therapeutic treatment against BW agent epidemics.
- 2975 Polyclonal Human Antibody Production System - Continued the process to produce polyclonal antibodies in transgenic cows by evaluating new methods and technologies for downstream purification and viral clearance.

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TB3

FY 2005 Accomplishments (Cont):
Total 16017

FY 2006 Planned Program:

- 991 Clinical Treatment for Sulfur Mustard Agent Burns.
- 991 Heteropolymer Anthrax Monoclonal Antibody.
- 1387 Oral Adjuvants - Develop adjuvants that enhance natural resistance and adaptive immune responses against mucosal pathogens.
- 1981 Outbreak Detection Information Network (ODIN).
- 2030 Anthrax Monoclonal Antibody Therapeutic and Prophylaxis Program.
- 2080 Polyclonal Human Antibody Productions System - Continue the process to produce polyclonal antibodies in transgenic cows by evaluating new methods and technologies for downstream purification and viral clearance.
- 2971 Dengue Countermeasures.
- 2971 Ebola Countermeasures.
- 3466 Plant Vaccine Development - Develop safe and efficacious oral multi-agent vaccines from plant-based anthrax and plaque platforms and developed an immediate therapeutic treatment against BW agent epidemics.
- 5942 UCLA High Speed, High Volume Laboratory Network for Infectious Diseases.

Total 24810

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PROJECT
TB3

	FY 2005	FY 2006	FY 2007
Transitional Medical Technology Initiative	0	29093	65006

FY 2006 Planned Program:

- 29093 Multiagent (Broad Spectrum) Medical Countermeasures - Evaluate therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways identified from basic research efforts. Design 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.

Total 29093

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PROJECT
TB3

FY 2007 Planned Program:

- 65006 Multiagent (Broad Spectrum) Medical Countermeasures - This effort is part of the Quadrennial Defense Review (QDR) "leading edge" investment to develop broad spectrum medical countermeasures against future genetically-engineered bio-terror threats, for which there are no current defenses. Expand drug discovery efforts such as anti-sense 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.

Total 65006

	FY 2005	FY 2006	FY 2007
Diagnostics	11849	4825	6098

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

DATE
February 2006

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

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

PROJECT
TB3

FY 2005 Accomplishments:

- 5599 Diagnostic Technologies - Developed tech base assay for detecting anthrax in blood using the Joint Biological Agent Identification and Diagnostic System (JBAIDS), Block I instrument granted FDA approval. Augmented field studies of assays, reagents and platforms for the diagnosis of potential biological warfare threat agents with animal studies. Transitioned assays in support of the JBAIDS acquisition program, Block I and II. Continued plant expression studies for Marburg virus and transitioned baculovirus expressed Ebola for further reagent development. Applied new technological approaches for processing clinical samples to complex matrices and different threat types. Initiated assessment of host response data in order to target the development of specialized gene sets. Completed extensive evaluation of commercial instruments meeting criteria for JBAIDS, Block II, toxin detection and forwarded data to the advanced developer.
- 1445 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Finalized standards for immunodiagnostics assays. Delivered four nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer. Delivered four antigen detection assays and/or supporting reagents to the advanced developer.
- 4805 Diagnostics Technologies, IT Medical Surveillance - Assessed integration of medical surveillance information and laboratory testing using the Epidemic Outbreak Surveillance (EOS) model.

Total 11849

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

DATE
February 2006

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

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

PROJECT
TB3

FY 2006 Planned Program:

- 3125 Diagnostic Technologies - Develop additional multiplexed nucleic acid assays. Invest in improving the sensitivity and specificity of existing assays, developing assays for new targets and new threats, as genomic data and techniques become available. Transition additional assays in support of the Joint Biological Agent Identification and Diagnostic System (JBAIDS) acquisition program Block I and II. Continue to augment field studies of assays, reagents and platforms for the diagnosis of potential biological warfare threat agents with animal studies prior to transition to the advanced developer; develop a more coordinated joint approach to performing animal studies and providing useful feedback to assay developers. Further apply new technological approaches for processing clinical samples to complex matrices and different organisms. Initiate evaluation of a broad range pathogen detection system capable of identifying genetically engineered strains. Continue to apply proteomics to the development of immunologic assays for pathogen detection. Collect data on host response to bacterial pathogens in order to develop gene sets. Continue assessing next generation technologies and adapting for military use.
- 1700 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Deliver four new nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer. Deliver four new antigen detection assays and/or supporting reagents to the advanced developer.

Total 4825

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

DATE
February 2006

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

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

PROJECT
TB3

FY 2007 Planned Program:

- 4298 Diagnostic Technologies - Continue to transition assays in support of the Joint Biological Agent Identification and Diagnostic System (JBAIDS) acquisition program, Block II. Further augment field studies of assays, reagents and platforms for the diagnosis of potential biological warfare threat agents with animal studies prior to transition to the advanced developer. Address more in-depth validation studies complementing DTO CB56; offer these assay development standards as a template for government agencies; assist the advanced developer in gaining Federal Drug Administration (FDA) approval of assays. Analyze data from a multi-center comparison of automated extraction technologies versus JBAIDS, Block I manual kit; make suggestions to advanced developer pertaining to a block improvement. Continue to target improvements in sample preparation techniques. Complete studies/analyze results to identify biomarkers of immunity in individuals vaccinated against biological warfare agents. Validate proteomics microarray for plague. Expand evaluation of a broad range pathogen detection system capable of identifying genetically engineered strains. Utilize proteomics data to develop and test immunologic assays for bioagent detection. Identify gene sets corresponding to early biomarkers of infection caused by selected bacterial biological agents. Develop assays targeting early biomarkers of infections caused by selected viral biological agents and test on existing fielded platforms. Continue to assess components of future comprehensive integrated diagnostic system suitable to both hand held and reference laboratory confirmatory testing; continue to investigate technologies capable integration of nucleic acid and immunodiagnostic testing and proceed with developmental testing in anticipation of support to JBAIDS, Block III.

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DATE **February 2006**

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

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

PROJECT
TB3

FY 2007 Planned Program (Cont):

- 1800 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Deliver four new nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer. Deliver four new antigen detection assays and/or supporting reagents to the advanced developer.

Total 6098

	FY 2005	FY 2006	FY 2007
Emerging Threats	10569	566	0

FY 2005 Accomplishments:

- 569 Genetically Engineered Threats - Initiated development of enhanced interferon therapeutics for viral vectored threats. Began development on high throughput microarray based resequencing of B. anthracis. Identified broad spectrum host cell traitor proteins using Ebola as a model.

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DATE **February 2006**

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

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

PROJECT
TB3

FY 2005 Accomplishments (Cont):

- 10000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Expanded medical biological defense technologies transitioned from the DARPA. Developed additional B-cell lines and evaluate the B-cell based diagnostic sensor technology on clinical samples. Developed a blood assay for the superantigen toxin antagonists. Complete development of five additional B-cell lines. Complete development and performance testing of a 16-channel B-cell based diagnostic sensor. Establish formulation for an orally bioavailable superantigen toxin antagonist.

Total 10569

FY 2006 Planned Program:

- 566 Genetically Engineered Threats - Conduct determination of spore germination inhibitors and their effectiveness. Research continuing into 2007 will be absorbed by the Therapeutics Research Area under Therapeutics for Bacterial Agents and Therapeutics for Viral Agents, as appropriate.

Total 566

	FY 2005	FY 2006	FY 2007
Pretreatments	13053	12013	9018

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

DATE
February 2006

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

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

PROJECT
TB3

FY 2005 Accomplishments:

- 1890 Vaccine Research Support, Alternate Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Demonstrated proof-of-concept for lead alternate vaccine delivery system(s). Completed preclinical research studies and prepared recommendations to support transition of commercial technology for alternate vaccine delivery out of the technology base.
- 1680 Vaccine Research Support, Recombinant Ricin Vaccine (DTO CB46) - Completed a comprehensive review of results with lead candidate, including potency, efficacy, adjuvant studies, toxicity and pathology studies in rodents. Completed efficacy studies and pathology in higher animal species with the lead vaccine candidate.
- 3070 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Continued testing candidates in available animals for EEE vaccine. Determined the compatibility of vaccine candidate, V3526 (VEE), and vaccine platforms in animals.
- 1295 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Tested leading vaccine candidates in animals (viral challenge dose, route, pre-existing vector immunity, and variation in viral challenge strain).

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

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

PROJECT
TB3

FY 2005 Accomplishments (Cont):

- 5118 Vaccine Research Support - Continued to perform animal studies which support clinical trials of selected vaccine candidates against bacterial threat agents. Initiated technology base studies in support of the development and eventual FDA licensure of the ricin and recombinant plague F1-V vaccine candidates. Initiated evaluation of inactivated BoNT light chain vaccine candidates as well as large-scale truncations of BoNT holotoxins in animal models. Initiated studies on multivalent vaccine candidates to protect against multiple BoNT serotypes, including cloning and expression of genes for novel multivalent vaccine candidates. Tested promising vaccine strategies in higher animal species for ability to protect against filoviruses. Continued testing of next generation Staphylococcal Enterotoxin A (SEA)/ Staphylococcal Enterotoxin B (SEB) immunogen as vaccine candidates to protect against multiple SE serotypes in vivo (inside the organism). Evaluated stability and immunogenicity of SEB toxin vaccine in support of clinical trials. Evaluated promising EEE/WEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Evaluated poxvirus DNA vaccine.

Total 13053

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

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

PROJECT
TB3

FY 2006 Planned Program:

- 1110 Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies (DTO CB64) - Provide for rapid, inexpensive, high-throughput, microarray-based DNA resequencing of biothreat agent genomes, whether they are naturally occurring, newly arising, or genetically engineered strains. Develop the capability to perform whole-genome sequencing in single laboratories with minimal space and personnel requirements at less than 1% of the current cost of existing, non-DOD industrial genome sequencing centers. Enable immediate definitive identification of the organism and provides specific data on the presence of any engineered elements. Develop and implement collection procedures and expand biothreat agent strain collection, focusing on Bacillus anthracis and Yersinia pestis. Demonstrate and evaluate two high-density microarray systems.
- 740 Vaccine Research Support, Recombinant Ricin Vaccine (DTO CB46) - Complete expression/purification of ricin toxin components in a soluble, immunogenic form and down-selection of vaccine candidates after Non-Human Primates (NHP) efficacy studies (surrogate marker of clinical efficacy). Complete formulation and stability studies. Provide technical data from completed vaccine research studies to the advanced developer for incorporation into an Investigational New Drug (IND) application.
- 3000 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Continue evaluating combinations of EEE, WEE, and V3526 (VEE) or alternate VEE constructs (the DNA- or replicon-based vaccine platforms) in animal models.

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

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

PROJECT
TB3

FY 2006 Planned Program (Cont):

- 1900 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Conduct animal models of aerosol infection with filoviruses. Determine if putative surrogate markers of protection reliably predict mitigation or prevention of disease in animals for optimal vaccine development. Continue recombinant subunit vaccine development for Ebola virus. Evaluate vaccine performance requirements (vaccine dose, route, number of doses) in animal models. Prepare current Good Manufacturing Product (cGMP) grade candidate vaccine materials for pre-IND studies. Prepare for down-selection of filovirus candidate vaccine platform. Prepare pre-IND data package for filovirus vaccine candidate.
- 1000 Multiagent Vaccines (Formerly Resuscitative Intervention) - Determine optimum dose mixture and route of entry for protein-based trivalent vaccine and evaluate any potential antigen interference phenomena.

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

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

PROJECT
TB3

FY 2006 Planned Program (Cont):

- 4263 Vaccine Research Support - Evaluate animal studies which support clinical trials of selected vaccine candidates against bacterial threat agents. Continue technology base studies in support of the development and eventual FDA licensure of the ricin candidate vaccine. Expand challenge studies against selected intracellular pathogen candidate vaccines and evaluate the contribution of cell-mediated immunity toward protection. Evaluate studies on multivalent BoNT vaccine candidates to protect against multiple BoNT serotypes. Evaluate next generation Staphylococcal Enterotoxin A/Staphylococcal Enterotoxin B (SEA/SEB) immunogens as vaccine candidates to protect against multiple SE serotypes in vivo. Finalize stability analysis and immunogenicity of SEB toxin vaccine in support of clinical trial. Complete evaluation of promising Western and Eastern Equine Encephalitis (EEE/WEE) vaccine candidates in higher animal species against EEE or WEE virus challenge. Complete evaluation of poxvirus DNA vaccine. Accelerate the evaluation of genetic vaccine candidates in non-human primate model systems for poxviruses (DNA vaccine). Increase the evaluation of the human immune response to selected target antigens.

Total 12013

FY 2007 Planned Program:

- 3100 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Complete duration of immunity studies with lead candidates for each platform, comparing the individual constructs and trivalent formulations. Develop Non-Human Primates (NHP) models of aerosol exposure to all alphaviruses. Begin down-selection of alphavirus vaccine candidate platforms for advanced development.

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

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

PROJECT
TB3

FY 2007 Planned Program (Cont):

- 1000 Multiagent Vaccines (Formerly Resuscitative Intervention) - Evaluate targeted Bacillus spore vaccine in animal models. Evaluate multiagent candidate vaccines in non-human primate (NHP) 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. Develop final data package for trivalent recombinant protein vaccine combining anthrax, plague and ricin from earlier optimization studies.
- 4918 Vaccine Research Support - Continue to evaluate animal studies which support clinical trials of selected vaccine candidates against bacterial threat agents. Proceed with evaluation of generic Bacillus vaccine candidate in higher animal models. Complete technology base studies in support of the development and eventual Food and Drug Administration (FDA) licensure of the ricin vaccine candidate. Begin optimization of new generation intracellular pathogen vaccines, considering alternative adjuvant formulations, routes of administration, and dosage schedules. Continue expanded challenge studies against selected intracellular pathogen candidate vaccines. Continue studies on multivalent BoNT vaccine candidates to protect against multiple BoNT serotypes. Proceed with evaluation of down-selected filovirus vaccine platform in higher animal species for ability to protect against filoviruses. 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. Finalize the evaluation of promising EEE/WEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Complete evaluation of poxvirus DNA vaccine for endurance of immunity.

Total 9018

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

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

PROJECT
TB3

	FY 2005	FY 2006	FY 2007
Therapeutics	16411	16664	16614

FY 2005 Accomplishments:

- 2917 Therapeutics, Bacterial - Assessed selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Developed enhance aerobiology capabilities and developed animal model to facilitate bacterial therapeutics research.
- 4384 Therapeutics, Toxin - Continued timing and dosage studies in mouse model with steroid candidate compound that prevents the lethality of Staphylococcal Enterotoxin type B (SEB). .
- 2200 Therapeutics, Viral - Finished characterization of genes identified in random homozygous knock-out screening and their evaluation as drug targets. Finished screening for inhibitors of ribonucleic acid (RNA) polymerase. Evaluated novel targets obtained from proteomic studies.
- 540 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Continued to finish technical data package supporting FDA approval of a labeled indication for pre- and post-exposure treatment for smallpox with intravenous (IV) cidofovir by the drug license holder.

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TB3

FY 2005 Accomplishments (Cont):

- 4430 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (BoNT) - Continued evaluation of high affinity recombinant human antibodies against Botulinum Neurotoxins (BoNT) in vivo. Developed surrogate endpoints of human clinical efficacy for BoNT therapeutics. Initiated evaluation of neuronal drug delivery systems for leading BoNT treatment modalities in vitro and ex vivo.
- 1940 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determined therapeutic potential of candidate drugs in small animal models, including determination of the optimum dose, route and schedule (DRS) for delivery of the drug and the therapeutic window (latest time treatment can be initiated).

Total 16411

FY 2006 Planned Program:

- 2677 Therapeutics, Bacterial - Continue to advance the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Continue to enhance aerobiology capabilities and aerosol efficiencies as it applies to animal model development in relation to pharmacokinetic and pharmacodynamic profiles to facilitate bacterial therapeutics research efforts.
- 2350 Therapeutics, Toxin - Continue to conduct proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of target toxins (botulinum neurotoxin, ricin, staphylococcal enterotoxins (SEs)). Continue to enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.

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

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

PROJECT
TB3

FY 2006 Planned Program (Cont):

- 2855 Therapeutics, Viral - Continue evaluating new drug formulations or prodrugs for orthopox viruses. Continue to enhance aerobiology capabilities and animal model development to facilitate viral therapeutics research. Perform dose ranging studies in primates for lead prodrug compounds for orthopox. Complete studies on short interfering RNA-mediated effects on Ebola.
- 300 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Perform testing in non-human primates (NHPs) for FDA licensure consideration under the FDA Animal Efficacy Rule. Develop and execute initial steps in plan for licensure and manufacturing of candidate, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging orthopox therapeutic modalities into suitable candidate therapies in humans.
- 5700 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Develop a technology from the information generated from this research development plan for nonclinical studies of optimum therapeutic candidates/treatment modalities. Determine and demonstrate the most suitable delivery system for the lead peptide inhibitors. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans, specifically as a complement to future vaccination strategies.

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TB3

FY 2006 Planned Program (Cont):

- 2300 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determine the effect of treatment on viral pathogenesis in the mouse Ebola virus model or other more appropriate small animal model such as mice and guinea pigs for Marburg. Perform efficacy studies in NHP models that provide the best model for evaluation of the potential for treating filoviruses. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging viral therapeutic modalities into suitable candidate therapies in humans. Conduct additional efficacy trials, advancing to higher species as appropriate. Initiate comprehensive analysis of mechanisms of protection. Complete analysis of studies performed to characterize the pathogenesis of Marburg virus (strain Ci67) in nonhuman primates in support of the FDA two animal efficacy rule.
- 482 Resuscitative Intervention - Screen 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. Begin development of in silico modeling of patient physiological response to chemical (nerve) agent to establish treatment response guidelines and to assist in evaluation of drug interaction effects.

Total 16664

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TB3

FY 2007 Planned Program:

- 3287 Therapeutics, Bacterial - Continue assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Therapeutics studies should include not only treatment in models of active infection but also post-exposure prophylaxis. Continue to enhance aerobiology capabilities and aerosol efficiencies as it applies to improve animal model development in relation to pharmacokinetic and pharmacodynamic profiles in order to facilitate bacterial therapeutic research efforts.
- 6300 Therapeutics, Toxin - Finish proof-of-concept studies and aerobiology studies in animal models with lead compounds shown to have potential as inhibitors of target toxins (botulinum neurotoxin, ricin, staphylococcal enterotoxins (SEs)). Define and demonstrate in vivo suitable delivery systems for lead candidate compounds.
- 3888 Therapeutics, Viral - Testing of humanized antibodies produced with corporate partners.
- 3139 Therapeutics, Therapy for Ebola and Marburg Virus Infections (DTO CB63) - Characterize and compare the utility of therapeutic interventions against Ebola and Marburg viruses in vitro and in animal models. Establish collaborative arrangements with industry partners, correlate all efforts with advance developers through the "product development team" process. Perform appropriate testing in relevant small and later large animal models for eventual FDA licensure.

Total 16614

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	859	0

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TB3

FY 2006 Planned Program:

- 859 SBIR

Total 859

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	24215	22574	0	71022	99435	138474	166246	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	9843	60612	71834	92533	95113	77377	181423	Cont	Cont

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	12125	23863	18893	31812	31656	32621	33785	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)). Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #22 (Medical Therapeutics - Limited anti-viral/ toxin development), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TC3

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Diagnostics	593	593	599

FY 2005 Accomplishments:

- 593 Diagnostic Technologies - Performed advanced research aimed at transitioning detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Followed-up studies to adapt DoD-developed whole blood cholinesterase assay for organophosphate exposure to automation/high throughput. Matured in vitro chemical and analytical parameters for the fluoride reactivation assay to detect the presence of VX nerve agent and performed preliminary animal work in anticipation of in vivo testing; validated a blood protein assay for detection of sulfur mustard adducts.

Total 593

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TC3

FY 2006 Planned Program:

- 593 Diagnostic Technologies - Continue advanced research experiments aimed at transitioning detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Expand studies adapting the DoD-developed whole blood cholinesterase assay for organophosphate exposure to automation and high throughput testing; analyze marker studies. Proceed with in vivo validation of flouride reactivation assay to detect VX nerve agent; investigate potential strategies for incorporation of internal standard to fluoride reactivation assay.

Total 593

FY 2007 Planned Program:

- 599 Diagnostic Technologies - 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 CW agent exposure. Conduct further animal studies to validate assays for detecting biomarkers of CWA exposure in biological samples. Complete automation/high throughput testing protocol the DoD-developed whole blood cholinesterase assay for organophosphate exposure; 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. Adapt fluoride reactivation assay standards developed in previous years to additional nerve agents.

Total 599

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

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

PROJECT
TC3

	FY 2005	FY 2006	FY 2007
Emerging Threats	1569	10336	0

FY 2005 Accomplishments:

- 1569 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Evaluated the effects of selected pretreatment and/or therapeutic medical countermeasures, to include the FDA-approved Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP), on the detrimental actions of low dose chemical warfare nerve agent exposure in guinea pigs.

Total 1569

FY 2006 Planned Program:

- 2206 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Complete studies on the effects of chronic low dose chemical exposure and possible medical countermeasures.
- 2700 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Effects and Countermeasures (DTO CB51) - Complete 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. Complete DTO CB51.
- 4000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Complete studies on the efficacy of barrier skin creams on NTAs and determine the effectiveness of current skin decontamination kits in treating NTA skin contamination. Determine the efficacy of oximes and human butyl cholinesterase against NTAs. Complete DTO CB57.

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BA3 - Advanced Technology Development (ATD)

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

PROJECT
TC3

FY 2006 Planned Program (Cont):

- 1430 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures - (DTO CB57) - Evaluate the pharmacokinetics of improved candidate medical countermeasures for comparison to the in vivo (inside the organism) persistence of NTAs. Conduct studies on human-derived butyrylcholinesterase (plasma and recombinant) as a bioscavenger protective molecule.

Total 10336

	FY 2005	FY 2006	FY 2007
Pretreatments	2828	6301	8697

FY 2005 Accomplishments:

- 2828 Nerve Agent Defense, Biological Scavenger - Completed evaluation of human protein recombinant scavenger as a nerve agent countermeasure. Initiated preparation of technical data package for transition out of the technology base. Continued to evaluate purification protocols for large scale isolation of human plasma-derived butyrylcholinesterase (Block I) - pBioscavenger (Increment I).

Total 2828

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

DATE
February 2006

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

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

PROJECT
TC3

FY 2006 Planned Program:

- 6301 Nerve Agent, Bioscavengers - Continue evaluation of catalytic bioscavenger (Block II) efficacy in animal model studies for safety and efficacy. Support studies for recombinant bioscavenger (Block II) transition to investigational new drug (IND) status. Perform advanced studies of in vivo expression systems for the delivery of bioscavengers. Explore utility of peptide drugs as potential catalytic bioscavengers. Continue studies of the 3-D crystallographic structures of human carboxylesterase (CaE) and paraoxynase 1 (PON-1). Initiate use of directed evolution or gene shuffling as an approach to identify cBioscavenger. Determine physiological based pharmacokinetic (PBPK) models to predict bioscavenger efficacy in Non-Human Primates (NHP) models.

Total 6301

FY 2007 Planned Program:

- 8697 Nerve Agent, Bioscavengers - Expand recombinant and catalytic bioscavenger (Block II) efficacy, immunogenicity, and stability studies. Provide supportive studies for investigational new drug (IND) submission for recombinant bioscavenger candidate (Block II). Continue evaluation of in vivo expression systems for bioscavenger delivery systems. Continue and extend studies of the 3-D crystallographic structures of human carboxylesterase (CaE) and paraoxynase 1 (PON-1). Extend animal model evaluation, significantly reduced immunogenicity, and efficacy studies of recombinant and catalytic bioscavengers.

Total 8697

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DATE
February 2006

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

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

PROJECT
TC3

	FY 2005	FY 2006	FY 2007
Therapeutics	7135	6401	9597

FY 2005 Accomplishments:

- 4256 Nerve Agent Defense, Improved Oxime (DTO CB48) - Determined efficacy of oximes against selected Non Traditional Agents (NTA) and traditional nerve agents in non-human primates (NHPs). Completed correlation of oxime efficacy with pharmacokinetics and AChE reactivation in guinea pigs. Completed pharmacokinetics of candidate in guinea pig and determined pharmacokinetics in non-human primate. Completed safety/toxicity studies of candidate oximes in mice and guinea pigs. Completed determination of stability of oximes in aqueous solution. Received Milestone A decision approval and transitioned three candidates to Advanced Development.
- 678 Nerve Agent Defense, Nerve Agent Anticonvulsants - Initiated pharmacokinetic (PK) evaluations of most promising anticonvulsants; determined relationship between successful seizure control and therapeutic blood levels.
- 272 Nerve Agent Defense, Neuroprotection - Initiated PK evaluations of selected neuroprotectants.
- 1176 Vesicant Agent Defense, Vesicant Medical Countermeasures - Initiated PK evaluations of selected antivesicants.
- 481 Vesicant Agent Defense, Cutaneous Therapeutics - Completed validation of pig model and evaluated the efficacy of several commercially available wound healing products in promoting improved healing of superficial dermal sulfur mustard injuries using a validated weanling pig model.

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

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

PROJECT
TC3

FY 2005 Accomplishments (Cont):

- 272 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Completed the efficacy evaluation and determined the protective ratios for Reactive Skin Decontaminant Lotion (RSDL), Skin decontamination kit M291SDK, 0.5% bleach, and soapy water challenged with nerve agents GD, VX, and two non-traditional agents in the haired guinea pig model. Completed the efficacy evaluation and determined the protective ratio for Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA) challenged with GD, VX, and two non-traditional agents in the haired guinea pig model.

Total 7135

FY 2006 Planned Program:

- 900 Improved Oxime - Perform safety testing and dose range study for new compounds in non-human primate model.
- 1701 Nerve Agent Defense, Nerve Agent Anticonvulsants - Maximize use of pharmacologic data obtained to develop improved single or multiple drug regimens to treat nerve agent induced seizures.
- 1100 Nerve Agent Defense, Neuroprotection - Complete and compile data for PK evaluations of most promising neuroprotectants. Investigate role of novel agents such as huperzineA in central nervous system (CNS) protection. Complete evaluation of neurobehavioral effects of nerve agents in non-human primates and rodents to investigate the role and efficacy of new therapeutic agents.
- 1300 Vesicant Agent Defense, Vesicant Medical Countermeasures - Determine the safety and efficacy of a variety of selected compounds, including protease inhibitors, using a rodent model. Continue PK evaluations of selected antivesicants.

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

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

PROJECT
TC3

FY 2006 Planned Program (Cont):

- 800 Vesicant Agent Defense, Cutaneous Therapeutics - Evaluate 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.
- 600 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Determine the efficacy of Reactive Skin Decontaminant Lotion (RSDL), Skin decontamination kit M291SDK, soapy water, and 0.5% bleach against non-traditional agents compared to no decontamination.

Total 6401

FY 2007 Planned Program:

- 5252 Therapeutics, Neurologic - (Note: This area combines areas previously titled Nerve Agent Anticonvulsants, Neuroprotectants, and Improved Reactivators) Initiate studies to evaluate in vivo efficacy of candidate reactivators against lethal intoxication by nerve agents. Establish pharmacokinetic and pharmacodynamic parameters of treatment to determine threshold therapeutic drug levels. Perform neurobehavioral assessment of promising candidate products in the appropriate models.
- 2498 Therapeutics, Cutaneous and Ocular - Perform pivotal animal efficacy studies, which will meet Food and Drug Administration (FDA) licensure data package requirements. Evaluate commercially available wound healing products for efficacy in promoting improved healing of superficial dermal sulfur mustard injuries.

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

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

PROJECT
TC3

FY 2007 Planned Program (Cont):

Compare the efficacy of Reactive Skin Decontaminant Lotion (RSDL), Skin decontamination kit M291SDK, soapy water, and 0.5% bleach versus no decontamination against Non Traditional Agent (NTA) exposure. 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, if needed.

- 847 Therapeutics, Medical Toxicology - NTAs and Other agents - Exploratory and comparative studies of emerging non-traditional chemical nerve agents. Focus on models and efficacy of interventions. Further discussion is classified.
- 1000 Chemical Warfare Agent Operational Exposure Hazard Assessment Research (DTO CB69) - Extrapolate relevant experimental effects to determine post-exposure health problems that may impact subsequent operational readiness and to 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.

Total 9597

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	232	0

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

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

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

PROJECT
TC3

FY 2006 Planned Program:

- 232 SBIR

Total 232

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	11402	21765	37663	15217	5028	5010	4880	Cont	Cont
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1350	5029	6417	38151	29405	14025	11702	Cont	Cont

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DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	2162	4441	4203	4523	6731	Continuing	Continuing

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 to 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 developments 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. This project addresses the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gap addressed is gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes).

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

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

PROJECT
TR3

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
Radioprotectants	0	0	2162

FY 2007 Planned Program:

- 2162 Radioprotectants - Continue further testing of a promising candidate drug found to have a dose-reduction factor (DRF) of 1.20 or greater in rodents. Initiate studies, including preclinical efficacy, in a large animal model Non-Human Primates (NHP), including non-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism, and initial determination of formulation. Determine products and regimens that mitigate and/or treat radiation injury post-exposure, with emphasis on broad activity, ease of administration, and safety. Search for improved antibiotics and antiviral regimens to control post-exposure infection in the context of immunosuppression and trauma, and probiotic therapies to minimize pathogenic infection and restore mucosal health.

Total 2162

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

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

PROJECT
TR3

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MR4 MEDICAL RADIOLOGICAL DEFENSE	0	0	6996	15051	15188	11040	3919	Cont	Cont

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TT3	TECHBASE TECHNOLOGY TRANSITION	0	11127	11087	7879	8340	8688	8627	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 (JSTO) to the Joint Program Executive Officer (JPEO). This project, which will be initiated in FY06, is funded by realignment of funds: BA6, Anti Terrorism; BA3, CB3 funds for Technology Readiness Evaluations; BA3, CP3 funds for Counter Proliferation Support Program, ACTD Planning and Development; and BA3, CM3 Homeland Defense, Civil Support Teams. The WMD-CST program (formerly Project CM3 - FY05 and earlier) funds Pre-Systems Acquisition in support of Consequence Management teams around the nation. The Technology Transition program supports Advanced Technology Demonstrations and planning for Advanced Concept Technology Demonstrations in the Experimentation and Technology Demonstration group. The Force Protection program demonstrates and tests technology for Force Protection/Installation Protection and specifically for PM Guardian's Installation Protection Program. The Technology Readiness Assessment program provides for testing on technologies transitioning out of the Physical Sciences and Medical Science and Technology programs to meet specific criteria postulated by the JPEO in Technology Transition Agreements or tests technologies provided in response to a Broad Agency Announcement in order to satisfy an acquisition strategy for a Joint Program Manager working with the JPEO.

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

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

PROJECT
TT3

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - EXPERIMENT & TECH DEMO	0	5308	6175

FY 2006 Planned Program:

- 1995 ACTD Candidate - Initiate the Military Applications in Reconnaissance and Surveillance (MARS) - Unattended Ground Sensors (UGS) program testing CBRN detection technologies for use on one-man portable UGSs.
- 1689 ACTD Demonstration - Execute the Military Applications in Reconnaissance and Surveillance (MARS) Unmanned Ground Vehicle (UGV) program testing CBRN detection technologies for use on one-man and two-man portable UGVs for technology insertion into the CBRN Unmanned Ground Reconnaissance (CUGR) ACTD or the transition program for CUGR ACTDs UGV portion.
- 1624 ACTD Testing - Execute the 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.

Total 5308

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

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

PROJECT
TT3

FY 2007 Planned Program:

- 1441 ACTD Candidate - Perform candidate technology maturation testing in preparation for a FY08 ACTD candidate.
- 1066 ACTD Demonstration - Continue the Military Applications in Reconnaissance and Surveillance (MARS) - Unmanned Ground Vehicle (UGV) program testing CBRN detection technologies for use on one-man and two-man portable UGVs for technology insertion into the CUGR ACTD or the transition program for CUGR ACTDs UGV portion.
- 1441 ACTD Testing - Continue the 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.
- 2227 ACTD Testing - MARS - Continue Unattended Ground Sensors (UGS) program testing CBRN detection technologies for use on one man portable UGSs.

Total 6175

	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - FORCE PROTECTION	0	490	507

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

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

PROJECT
TT3

FY 2006 Planned Program:

- 490 Force Protection - Develop and demonstrate medical surveillance technology integration for the installation protection program. This is the first year of a two-year effort.

Total 490

FY 2007 Planned Program:

- 507 Force Protection - Develop and demonstrate medical surveillance technology integration for the installation protection program. This is the second year of a two-year effort.

Total 507

	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - TECH READINESS ASSESS	0	2832	1981

FY 2006 Planned Program:

- 1305 Technology Readiness Assessment (TRA) - Complete Technology Readiness Evaluation (TRE) for Collective Protection in the following focus areas: CB Barrier Material, Quick Erect, COL PRO Support Equipment, and Whole COLPRO Systems.
- 234 TRA - Initiate planning of FY07 TREs to include chemical stand-off detection equipment and Joint Warning and Reporting Network technologies.

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

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

PROJECT
TT3

FY 2006 Planned Program (Cont):

- 234 TRA - Conduct TRAs for the Military Application in Reconnaissance and Surveillance (MARS-UGV) and the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM).
- 1059 TRA - Complete performance testing of the Collective Protection Air Purification technologies.

Total 2832

FY 2007 Planned Program:

- 1519 Technology Readiness Assessment - Conduct Technology Readiness Evaluation (TRE) on chemical stand-off technologies. Conduct TREs on warning and reporting network technologies. Conduct TRE for the Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM).
- 462 Technology Readiness Assessment - Plan Technology Readiness Evaluation for increment two of Joint Operational Effects Federation (JOEF).

Total 1981

	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - WMD-CST	0	2385	2424

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

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

PROJECT
TT3

FY 2006 Planned Program:

- 1515 Weapons of Mass Destruction Civil Support Teams (WMD CST) - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.
- 313 WMD CST - Transition technologies tested in FY05 and FY06 processes through the Joint Program Executive Office Chemical Biological Defense (JPEO-CBD) Non-Standard Equipment Review Panel (NSERP) process.
- 557 WMD CST - Perform operational testing and Homeland Defense Demonstrations for WMD CSTs.

Total 2385

FY 2007 Planned Program:

- 1537 Weapons of Mass Destruction Civil Support Teams (WMD CST) - Transition technologies tested in FY05 and FY06 processes through the Joint Program Executive Office Chemical Biological Defense (JPEO-CBD) Non-Standard Equipment Review Panel (NSERP) process.
- 887 WMD CST - Perform operational testing and Homeland Defense Demonstrations for WMD CSTs.

Total 2424

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	112	0

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

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

PROJECT
TT3

FY 2006 Planned Program:

- 112 SBIR

Total 112

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4869	0	0	0	0	0	0	0	4869
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	15853	24239	25452	26152	15083	14344	26674	Cont	Cont

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BUDGET ACTIVITY 4
ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES (ACD&P)

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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)

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	125420	122274	73111	139990	149679	176770	205721	Continuing	Continuing
CA4	CONTAMINATION AVOIDANCE (ACD&P)	50885	31140	1000	8031	12368	5624	0	0	109048
CM4	HOMELAND DEFENSE (ACD&P)	365	11086	0	0	0	0	0	0	11451
CO4	COLLECTIVE PROTECTION (ACD&P)	0	7472	0	0	0	0	0	0	7472
CP4	COUNTERPROLIFERATION SUPPORT (ACD&P)	15853	24239	25452	26152	15083	14344	26674	Continuing	Continuing
DE4	DECONTAMINATION SYSTEMS (ACD&P)	16950	998	2000	4517	2577	2278	4002	Continuing	Continuing
IS4	INFORMATION SYSTEMS (ACD&P)	5750	3000	0	0	0	0	0	0	8750
MB4	MEDICAL BIOLOGICAL DEFENSE (ACD&P)	24215	22574	0	71022	99435	138474	166246	Continuing	Continuing
MC4	MEDICAL CHEMICAL DEFENSE (ACD&P)	11402	21765	37663	15217	5028	5010	4880	Continuing	Continuing
MR4	MEDICAL RADIOLOGICAL DEFENSE	0	0	6996	15051	15188	11040	3919	Continuing	Continuing

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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)

A. <u>Mission Description and Budget Item Justification:</u> 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 Prototype (ACD&P) of CB defensive equipment, both medical and non-medical. DoD missions for Homeland Security and for civil support operations have recently expanded and have resulted in providing focus to develop technologies to support CB counterterrorism initiatives. These projects 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. This program is enhanced using Counterproliferation Support Program funding. ACD&P is conducted for an array of chemical/biological/toxin detection and warning systems to include ARTEMIS, decontamination capabilities to include the sorbent technology, the Joint Service Family of Decontamination Systems (JSFDS) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs. ACD&P is also conducted for the transition of biological detection components (major thrusts include: (1) early warning; (2) collector concentrators; (3) generic detection; and (4) improved reagents) for the future Joint Biological Point Detection System (JBPDS) Block II, and Joint Biological Standoff Detection System, (JBSDS). 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. 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 and chemical/biological defense equipment and is correctly placed in Budget Activity 4.

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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)

B. Program Change Summary:		**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		125718	100796	74392
Current Biennial Budget Estimate (FY 2007)		125420	122274	73111
Total Adjustments		-298	21478	-1281
a. Congressional General Reductions		-98	-1772	0
b. Congressional Increases		0	23250	0
c. Reprogrammings		832	0	0
d. SBIR/STTR Transfer		-1032	0	0
e. Other Adjustments		0	0	-1281

Change Summary Explanation:

Funding: FY06 - Congressional increases to enhance development projects (+$9,200K CA4; +$8,500K CM4; +$3,000K IS4; +$2,550K MB4). Congressional general reductions and other adjustments (-$390K CA4; -$46K CM4; -$133K CO4; -$439K CP4; -$17K DE4; -$355K MB4; -$392K MC4).

Schedule: N/A

Technical: N/A

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DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CA4	CONTAMINATION AVOIDANCE (ACD&P)	50885	31140	1000	8031	12368	5624	0	0	109048

A. Mission Description and Budget Item Justification:

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) Plasma Bioscavenger (pBSCAV), (2) Joint Biological Point Detection System (JBPDS), (3) Joint Biological Point Detection System Block II (JBPDS BLK II), (4) Joint Biological Tactical Detection System (JBTDS), (5) Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM), (6) the Non-Traditional Agent (NTA) Detection Improvement Program, (7) the Portable Area Warning and Surveillance System (PAWSS) and (8) Epidemic Outbreak Surveillance (EOS).

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DATE
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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
CA4

The Joint Biological Point Detection System (JBPDS) is the only 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. Director, Operational Test and Evaluation has mandated Whole System Live Agent Test prior to FRP.

The JBPDS Block II program uses spiral development with an evolutionary component/suite upgrade acquisition approach, to take advantage of emerging technologies and to provide the Services with enhanced detection performance at lower life cycle costs. Per Director, Operational Test and Evaluation (DOT&E) Memorandum dated July 9, 2002, the JBPDS Block II program funding will support the development of a Whole System Live Agent Test (WSLAT) capability. DOT&E has directed the JBPDS program undergo WSLAT prior to a program Full Rate Production (FRP) decision. The JBPDS Block II funding will support WSLAT methodology, chamber design, system purchase and JBPDS record test execution.

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

DATE
February 2006

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

The JCBRAWM Increment 1 will provide first real-time biological detection capability in source water. Increment 2 will provide increased detection/monitoring capabilities for chemicals in water. Increment 3 will provide radiological detection capability in water. Increment 4 will provide non-reagent biological detection in water replacing Increment 1.

The JBTDS will be employed at the wing, battalion, squadron and lower levels to provide detection and warning of biological attacks delivered by various weapon systems and provide early warning to personnel in potential hazard area. In addition, JBTDS will provide local alarm to personnel in the potential hazard area. JBTDS will augment existing biological detection systems to provide a seamless array capable of near real time detection and warning theater-wide to limit the effects of biological agent attacks which have the potential for catastrophic effects to US forces.

NTA detection efforts will evaluate Non-Developmental Item (NDI) and developmental technologies to enhance legacy and developmental detection systems capability to detect non-traditional agents.

PAWSS is a technology demonstration to determine the utility of cascading detection methodology using radar and force protection surveillance to tip and cue dedicated chemical biological detection assets for detection and warning. PAWSS will integrate long and mid-range radar systems, force protection intrusion detectors, and an integrated CB data fusion system to augment the capabilities of traditional CB detection systems. Efforts include modeling and simulation, system development/integration, and limited technology demonstration.

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PE NUMBER AND TITLE
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PROJECT
CA4

EOS (Epidemic Outbreak Surveillance) Project Silent Guardian is to provide a surveillance tool to select USAF, USN, and U.S. Army Medical Treatment Facilities (MTFs) within the Military District Washington (MDW) National Capital Region from December 2004 through March 2005. This detection capability from EOS uses the Respiratory Pathogen Microarray (RPM) to enable robust, rapid pathogen identification for a subset of pathogens that result in febrile respiratory illness, including bio-threat agents in a compressed time.

pBSCAV - (Plasma Bioscavenger). A chemical prophylaxis effective against a broad spectrum of nerve agents. It will inactivate the nerve agents by irreversibly binding to the nerve agent before it can inhibit normal nerve functions.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
STANDOFF CHEMICAL AGENT DETECTION SYSTEM	1192	0	0
RDT&E Articles (Quantity)	0	0	0

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PROJECT
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FY 2005 Accomplishments:

- 697 ARTEMIS - Completed system performance modeling activities to evaluate LIDAR performance against the full range of threat agents and to ambient water density and ozone. Tailored the performance analyses to support the on going Standoff Chemical Detection Analysis being led by MIT Lincoln Laboratory. The performance analysis products assisted JPEO-CBD in crafting a technical and acquisition way ahead for standoff chemical detection of vapors, aerosols and rains.
- 495 ARTEMIS - Performed acquisition program close out and archived acquisition documentation as well as technical program products such as Component Advanced Development Reports, Liquid Agent Spectra Measurements, LIDAR Performance Model, Spectral Algorithm Stimulator Report and Simulant Selection Analysis. Developed reports of major program decisions and lessons learned. Coordinated with DTRA to establish Technology Readiness Level of Frequency Agile LIDAR components. Performed program and financial management, scheduling, planning and reporting.

Total 1192

	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	5403	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3000 JBPDS - Initiated spiral improvements to JBPDS Line Replaceable Units (LRUs).

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PROJECT
CA4

FY 2005 Accomplishments (Cont):

- 1500 JBPDS - Initiated system level validation platform.
- 903 JBPDS - Provided systems engineering support.

Total 5403

	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTOR SYSTEM BLK 2	4600	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 1620 JBPDS BLK II - Continued methodology work in support of Whole System Live Agent Test (WSLAT) to include standardizing the Standing Operating Procedures, preparation, and conformance testing of the challenge materials to be used in the WSLAT effort.
- 642 JBPDS BLK II - Continued Modeling and Simulation effort in support of WSLAT which included initiating the build of the Joint Biological Point Detection System (JBPDS) engineering model through component analysis.
- 779 JBPDS BLK II - Procured test consumables to include carrier box assemblies and Electrochemiluminescence (ECL) assays to support methodology development.

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PROJECT
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FY 2005 Accomplishments (Cont):

- 300 JBPDS BLK II - Initiated preliminary chamber design effort. Completed Statement of Work and System Requirements Document in support of chamber design contract.
- 1010 JBPDS BLK II - Provided government engineering, program management and technical support of WSLAT program.
- 249 JBPDS BLK II - Initiated contractor support for optimization of JBPDS strung-out configuration, maintenance and repair support, and engineering manufacturing support.

Total 4600

	FY 2005	FY 2006	FY 2007
JOINT BIO TACTICAL DETECTION SYSTEM	0	0	1000
RDT&E Articles (Quantity)	0	0	0

FY 2007 Planned Program:

- 800 JBTDS - Establish Product Office and perform Pre-milestone B activities for new program management start such as acquisition documentation and initiation of PM-IPTs.
- 200 JBTDS - Develop network algorithm to incorporate use of heterogeneous biological detector for initial JBTDS solution.

Total 1000

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

PROJECT
CA4

	FY 2005	FY 2006	FY 2007
JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITOR	3967	3952	0
RDT&E Articles (Quantity)	20036	2020	0

FY 2005 Accomplishments:

- 2360 JCBRAWM - Congressional Interest Item - Purchased test items (20,000 test tickets at $0.1K each, $2.0M total; and 36 ticket readers at $10K each, $360K total. Vendor: ANP Technology, Inc.).
- 1535 JCBRAWM - Congressional Interest Item - Initiated contractor detection system development of dot and line-based multiplexed assays.
- 72 JCBRAWM - Congressional Interest Item - Initiated systems engineering support.

Total 3967

FY 2006 Planned Program:

- 3000 JCBRAWM - Initiate test and evaluation efforts to include preparation of test methodology, design of test set-up and development of equipment specifications. Initiate probability/receiver operating characteristics curves.
- 552 JCBRAWM - Continue systems engineering support and initiate document preparation for Milestone B.

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CA4

FY 2006 Planned Program (Cont):

- 400 JCBRAWM - Continue procurement of test items (2,000 test tickets at $0.1K each, $200K total; and 20 readers at $10K each, $200K total. Vendor: ANP Technology, Inc.)

Total 3952

	FY 2005	FY 2006	FY 2007
NON TRADITIONAL AGENT DETECTION IMPROVEMENT PROGRAM	2845	17776	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 200 NTA - Updated trade-off studies to select and test technologies for detection of NTAs which can be used to augment or improve legacy and developmental detection systems.
- 2345 NTA - Continued integration of existing selected NTA technologies into legacy and developmental detection systems. Continued developmental testing using simulants and live agents.
- 300 NTA - Provided operational assessment/system engineering efforts for NTA enhanced detection systems.

Total 2845

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

PROJECT
CA4

FY 2006 Planned Program:

- 2776 NTA - (T&E Capability) Initiate and complete preparation of test methodology, to include design of test set-up and equipment specifications, to test all CBDP systems with non-traditional and emerging threat agents.
- 8000 NTA - (T&E Capability) Initiate and complete purchase and assembly of test chamber fixture equipment and modification of existing chambers for multi-agent use.
- 4000 NTA - (T&E Capability) Initiate and complete validation of test and sampling methods.
- 2000 NTA - (T&E Capability) Complete integration of existing NTA technologies into legacy and developmental detection systems.
- 1000 NTA - (T&E Capability) Initiate and complete development of standard operating procedures to include safety, surety, testing methods and data analysis.

Total 17776

	FY 2005	FY 2006	FY 2007
PORTABLE AREA WARNING AND SURVEILLANCE SYSTEM	2045	0	0
RDT&E Articles (Quantity)	0	0	0

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
CA4

FY 2005 Accomplishments:

- 225 PAWSS - Completed planning and execution of battlefield simulations.
- 760 PAWSS - Completed system engineering, integration and testing.
- 1060 PAWSS - Completed limited technology demonstration planning and execution.

Total 2045

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	30833	9113	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 517 TT Bio - Initiated technology transition, including developmental testing, of capabilities for early warning and detection, detection and identification of biological and chemical agents, including novel threat agents, and decision support tools.
- 5500 pBSCAV - Initiated small-scale manufacturing, process development, and assay qualification.
- 300 pBSCAV - Initiated Investigational New Drug (IND) application.
- 7265 EOS (Epidemic Outbreak Surveillance) Project Silent Guardian - Congressional Interest Item - Initiated protocol development and assay optimization.

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PROJECT
CA4

FY 2005 Accomplishments (Cont):

- 3000 EOS Project Silent Guardian - Congressional Interest Item - Initiated confirmatory analysis, culturing and/or molecular testing in accordance with the gold-standard laboratory operating procedures.
- 70 EOS Project Silent Guardian - Congressional Interest Item - Provided program management and logistics management support.
- 37 EOS Project Silent Guardian - Congressional Interest Item - Initiated confirmatory testing.
- 2000 Provided support for critical nuclear missions and requirements.
- 9918 Chemical and Biological Defense Program Initiative Fund - Provided for the development of modeling and simulation/battlespace management efforts across the broad-range of military operations.
- 1664 Architecture Information System - Developed software with upgraded functionality, improved C2P2 injectors, improved training material and more robust user support. Will be deployed to Korea, and other services units in the United States and abroad.
- 562 Military Mail Screening Program (MMSP) - Assisted JPEO in review of DoD mail processing flow report summaries and evaluation of potential locations and mail flow considerations for first phase mail screening sites.

Total 30833

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PROJECT
CA4

FY 2006 Planned Program:

- 4159 TT Bio - Congressional Interest Item - Wide-Spectrum Bio-ID Sensor.
- 991 TT Bio - Congressional Interest Item - Next Generation Dual Use Bio-Defense Technologies.
- 1486 TT Bio - Congressional Interest Item - BioBlower.
- 991 TT Bio - Congressional Interest Item - Continuation of Robotics Testbed & Establishment of Cooperative Unmanned Ground and Aerial Vehicle Incubator.
- 1486 TT Bio - Congressional Interest Item - Advance Sensor Technology R&D Center.

Total 9113

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	299	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 299 SBIR

Total 299

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PROJECT
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C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA5 CONTAMINATION AVOIDANCE (SDD)	63966	83605	64689	99817	58425	53039	13990	Cont	Cont
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	2070	9949	7035	7016	7207	7206	6978	Cont	Cont
JC0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	134532	111757	105769	106619	104249	127947	125221	Cont	Cont
JC0101 CHEM/BIO AGENT WATER MONITOR	0	0	0	838	2078	2259	6591	Cont	Cont
JC0250 JOINT BIO STANDOFF DETECTOR SYSTEM (JBSDS)	1917	16482	0	0	0	0	10161	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	10257	14781	10267	7671	0	0	0	0	42976
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	22681	26510	30407	32267	39546	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	55548	26910	7869	12995	12961	13035	0	0	129318
MC0100 JT SVC LIGHT NBC RECON SYS (JSLNBCRS)	44799	46647	52806	56432	57245	94563	110103	Cont	Cont

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C. Other Program Funding Summary (Cont):

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	2718	17513	19579	30107	29519	38038	32823	Cont	Cont

D. Acquisition Strategy:

ARTEMIS — The Artemis acquisition program has been closed.

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. Through 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). Upgraded LRUs that demonstrate improved system performance, availability, and lower ownership cost, will be supplied to field units throughout the LRIP phase, until new Full Rate Production (FRP) systems or LRUs are developed that meet the objective requirements. 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.

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PROJECT
CA4

JBTDS

The JBTDS will use an evolutionary development strategy to expedite fielding of a system to meet the threshold requirements and then be upgraded at intervals until the objective requirements can be met and implemented at the appropriate time. Pre-milestone activities to reach Milestone A have been initiated in FY05. Concurrently, tech base activities are being monitored to leverage and/or accelerate critical detection technologies.

JCBRAWM

Increment I: Conducted technology down-select in Feb 04 with formal Decision Analysis Process and Panel. Recommended for early transition of biodetection tickets for the interim capability. The concept of this detector will be handheld multiplex assay tickets with a reader.

Increment II: This increment identifies a technology for detecting/monitoring Chemical Warfare Agents (CW agents) in water. Milestone A is planned for FY08.

Increment III: This increment develops a detector/monitor for identifying radiological agents in water. Milestone A is planned for FY08.

Increment IV: This increment develops a technology to replace Increment I with a non-reagent biological detector/monitor in water.

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PROJECT
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NTA

As a result of tradeoff studies, develop and test the following NTA detection technologies: ACADA Model-D and M256A1 Low Volatility Hazard (LVH) kit. Enhance ACADA Model-D detector performance using collector devices. Perform technical and NTA laboratory testing in-house on two independent designs, down-select for final implementation, perform NTA tests in-house and support tests at United Kingdom NTA test facilities. Develop test devices and methods for M256A1 LVH NTA/CWA detection, perform in-house technical tests and independent user tests to support a product improvement to the kit.

Develop an NTA test chamber using in-house and contractually developed/purchased assemblies. Validate chamber performance for NTA testing.

PAWSS

The PAWSS demonstration was conducted using the Government Integrated Product Team as the Lead Systems Integrator for a complex set of activities performed by Other Government Agencies and contractors. Each task was awarded based on technical expertise in the subject matter or technology required. The contracts were awarded sole source to developers of the selected Government off-the-shelf technologies. The contractors and OGA's were incorporated into the Integrated Product Team as full partners.

Future acquisitions will be conducted using open competition to develop modifications to the systems required to support the PAWSS concept of operations.

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PROJECT
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TT Bio

TT Bio - Initiate technology transition of capabilities for early warning detection, detection and identification of biological and chemical agents, including novel threat agents, and decision support tools. Report critical information through the Global Command and Control Systems (GCCS) and into the common operating picture (COP).

EOS (Epidemic Outbreak Surveillance) - Project Silent Guardian a short-term project to provide surveillance tool to select USAF, USN, and U. S. Army Medical Treatment Facilities (MTFs) within the Military District Washington (MDW) National Capital Region.

pBSCAV (Plasma Bioscavenger) - is based on butyrylcholinesterase purified from human plasma. Medical Identification and Treatment Systems (MITS) 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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
CA4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
SW SB - System Level Validation Platform	C/CPFF	Battelle, Columbus, OH	F	0	1500	4Q FY05	0	NONE	0	NONE	0	1500	0
HW SB - Upgrade Collector	SS/CPFF	Texas A&M, College Station, TX	N	0	2100	2Q FY05	0	NONE	0	NONE	0	2100	0
HW SB - LRU Upgrade	MIPR	Various	U	0	900	3Q FY05	0	NONE	0	NONE	0	900	0
JBTDS													
SW SB - Network Algorithm development	C/CPFF	TBS	C	0	0	NONE	0	NONE	200	1Q FY07	0	200	0
JCBRAWM													
HW C - Purchase Test Items	SS/FFP	ANP Technology, Inc., Newark, DE	C	0	2360	3Q FY05	400	2Q FY06	0	NONE	0	2760	0
HW C - Development of Nano-Intelligent Detection System	SS/CPFF	ANP Technology, Inc., Newark, DE	C	0	1535	3Q FY05	0	NONE	0	NONE	0	1535	0
NTA													
HW C - Detector Enhancement	MIPR	Various	U	250	1645	2Q FY05	0	NONE	0	NONE	0	1895	0
HW S - Technology Down-select Studies - Support	MIPR	Various	U	319	200	2Q FY05	0	NONE	0	NONE	0	519	0
PAWSS													
SW S - Modeling and Simulation	MIPR	Various	U	682	150	2Q FY05	0	NONE	0	NONE	0	832	0
SW S - Radar Enhancements	MIPR	Various	U	1153	300	2Q FY05	0	NONE	0	NONE	0	1453	0
SW S - Software Integration	Reqn	Various	C	300	279	2Q FY05	0	NONE	0	NONE	0	579	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio													
TT Bio - Chemical Biological Assessment Tool	MIPR	RDECOM, Aberdeen Proving Ground, MD	U	0	400	1Q FY06	0	NONE	0	NONE	0	400	0
TT Bio - Technical Evaluation and Research Support	C/CPFF	The Johns Hopkins University, Laurel, MD	F	0	117	4Q FY05	0	NONE	0	NONE	0	117	0
pBSCAV - Small-Scale Manufacturing, Process Development, Assay Validation	C/CPFF	DynPort Vaccine Corporation (DVC), Frederick, MD	C	0	2310	3Q FY05	0	NONE	0	NONE	0	2310	0
MMSP - Study interaction with other postal/parcel systems	MIPR	NSWC, Dahlgren, VA	U	0	98	1Q FY06	0	NONE	0	NONE	0	98	0
Architecture Info System - Software development	SS/FFP	Bruhn Newtech Corp, Aberdeen, MD	C	0	618	4Q FY05	0	NONE	0	NONE	0	618	0
Architecture Info System - Software dev	SS/FFP	SAIC, San Diego, CA	C	0	346	4Q FY05	0	NONE	0	NONE	0	346	0
Architecture Info System - Software dev	SS/FFP	ADI, San Diego, CA	C	0	235	4Q FY05	0	NONE	0	NONE	0	235	0
Architecture Info System - Software dev	SS/FFP	Sonalysts, San Diego, CA	C	0	243	4Q FY05	0	NONE	0	NONE	0	243	0
Architecture Info System - Software dev	SS/FFP	Systems Center, San Diego, CA	C	0	72	4Q FY05	0	NONE	0	NONE	0	72	0
Architecture Info System - Software dev	MIPR	Air Force Research Laboratory, Rome, NY	U	0	149	4Q FY05	0	NONE	0	NONE	0	149	0

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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio - Wide spectrum Bio-ID Sensor	SS/FFP	TBS	C	0	0	NONE	4159	4Q FY06	0	NONE	0	4159	0
TT Bio - Next Gen Bio-Defense Tech	SS/FFP	TBS	C	0	0	NONE	991	4Q FY06	0	NONE	0	991	0
TT Bio - BioBlower	SS/FFP	TBS	C	0	0	NONE	1486	4Q FY06	0	NONE	0	1486	0
TT Bio - Robotics Testbed	SS/FFP	TBS	C	0	0	NONE	991	4Q FY06	0	NONE	0	991	0
TT Bio - Advanced Sensor Tech	SS/FFP	TBS	C	0	0	NONE	1486	4Q FY06	0	NONE	0	1486	0
Subtotal I. Product Development:				2704	15557		9513		200		0	27974	

Remarks: JCBRAWM - JCBRAWM - FY05 - 20,000 test tickets at $0.1K each, $2.0M total; and 36 ticket readers at $10K each, $360K total. Vendor: ANP Technology, Inc.
JCBRAWM - FY06 - 2,000 test tickets at $0.1K each, $200K total; and 20 ticket readers at $10K each, $200K total. Vendor: ANP Technology, Inc.

TT Bio - pBSCAV funding continues in FY06 and FY07, but is located under MC4, Medical Chemical Defense.

Additional MMSP funds executed in FY05 under CM5 - MMSP.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
ES S - Perf Modeling Analysis	C/CPFF	Battelle, Arlington, VA	C	816	220	2Q FY05	0	NONE	0	NONE	0	1036	1305
ES S - Perf Modeling	MIPR	NSWC, Dahlgren, VA	U	0	175	2Q FY05	0	NONE	0	NONE	0	175	0
ES S - Modeling Support	MIPR	Various	U	0	302	2Q FY05	0	NONE	0	NONE	0	302	0
JBPDSBLK2													
ES S - Support for Optimization and Engineering Manufacturing	MIPR	JPM BD, APG, MD & Edgewood Chemical Biological Center, APG, MD	U	0	249	2Q FY05	0	NONE	0	NONE	0	249	0
NTA													
TD/D C - Develop Standard Operating Procedures	MIPR	Various	U	0	0	NONE	1000	3Q FY06	0	NONE	0	1000	0
ES C - Systems Integration Support	MIPR	Various	U	0	0	NONE	2000	3Q FY06	0	NONE	0	2000	0
TT Bio													
pBSCAV - Regulatory Integration, Quality Assurance, & IND Support Efforts	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	555	3Q FY05	0	NONE	0	NONE	0	555	0
EOS (Epidemic Outbreak Surveillance) - Confirmatory testing	MIPR	Brooks City Base, TX	U	0	37	2Q FY05	0	NONE	0	NONE	0	37	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2006

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 - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MMSP - Support	MIPR	SAF/FMBMB, Washington, DC	U	0	100	1Q FY06	0	NONE	0	NONE	0	100	0
MMSP - Methods for handling high mail volumes	MIPR	AF/Electronic System Center, Hanscom, AFB, MA (Contractor TBS)	F	0	215	1Q FY06	0	NONE	0	NONE	0	215	0
Subtotal II. Support Costs:				816	1853		3000		0		0	5669	

Remarks: TT Bio - pBSCAV funding continues in FY06 and FY07, but is located under MC4, Medical Chemical Defense.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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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
CA4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
OTHT S - Methodology Testing	MIPR	DPG, UT	U	0	1620	2Q FY05	0	NONE	0	NONE	0	1620	0
OTHT S - Modeling and Simulation and Build of Engineering Model	MIPR	Edgewood Chemical Biological Center, APG, MD	U	0	642	2Q FY05	0	NONE	0	NONE	0	642	0
OTHT S - Procure Test Consumables	MIPR	CBMS, FT Detrick, MD and JPM BD, APG, MD	U	0	779	2Q FY05	0	NONE	0	NONE	0	779	0
OTHT S - Preliminary Chamber Design	MIPR	JPM NBC CA, APG, MD	U	0	300	4Q FY05	0	NONE	0	NONE	0	300	0
JCBRAWM													
OTHT SB - Developmental/Operational Testing	MIPR	Various	U	0	0	NONE	3000	2Q FY06	0	NONE	0	3000	0
NTA													
DTE C - NTA Enhancement Testing	MIPR	Various	U	710	700	1Q FY05	0	NONE	0	NONE	0	1410	0
DTE C - Test Methodology and Design	MIPR	Various	U	0	0	NONE	2776	2Q FY06	0	NONE	0	2776	0
OTHT C - Purchase/Assembly of Test Equipment	PO	Various	C	0	0	NONE	8000	2Q FY06	0	NONE	0	8000	0
DTE C - Equipment/Chamber Validation	PO	Various	U	0	0	NONE	4000	3Q FY06	0	NONE	0	4000	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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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
CA4

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PAWSS													
OTE S - Limited Technology Demonstration	MIPR	Various	U	298	885	3Q FY05	0	NONE	0	NONE	0	1183	0
TT Bio													
pBSCAV - Conduct Process Development, Assay Validation Efforts	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	2435	3Q FY05	0	NONE	0	NONE	0	2435	0
EOS (Epidemic Outbreak Surveillance) - Protocol development	MIPR	Naval Research Laboratory, Washington, DC	U	0	7476	2Q FY05	0	NONE	0	NONE	0	7476	0
EOS (Epidemic Outbreak Surveillance) - Confirmatory analysis	MIPR	Naval Health Research Center, San Diego, CA	U	0	1945	2Q FY05	0	NONE	0	NONE	0	1945	0
EOS (Epidemic Outbreak Surveillance) - Op Assessment of Capabilities	MIPR	Brooks AFB, TX	U	0	45	2Q FY05	0	NONE	0	NONE	0	45	0
Assessment of missions and requirements	SS/FFP	GovWorks, Herndon, VA	C	0	1600	4Q FY05	0	NONE	0	NONE	0	1600	0
Assessment of missions and requirements	SS/FFP	SAIC, San Diego, CA	C	0	400	4Q FY05	0	NONE	0	NONE	0	400	0
CBDIF - Modeling and simulation/battlespace mgmt	MIPR	TBS	U	0	9918	2Q FY06	0	NONE	0	NONE	0	9918	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2006

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 - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MMSP - Technical Evaluation	C/CPFF	The Johns Hopkins Laboratory, Laurel, MD	F	0	149	1Q FY06	0	NONE	0	NONE	0	149	0
Subtotal III. Test and Evaluation:				1008	28894		17776		0		0	47678	

Remarks: TT Bio - pBSCAV funding continues in FY06 and FY07, but is located under MC4, Medical Chemical Defense.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
PM/MS S - Program Office Planning and Programming	MIPR	NSWCDD, Dahlgren, VA	U	1889	165	2Q FY05	0	NONE	0	NONE	0	2054	10076
PM/MS S - Program Office Program Support	MIPR	Various	U	0	330	2Q FY05	0	NONE	0	NONE	0	330	0
JBPDS													
PM/MS S - Engineering Support	MIPR	JPM NBC CA, APG, MD	U	0	903	2Q FY05	0	NONE	0	NONE	0	903	0
JBPDSBLK2													
PM/MS S - Program Management and Technical Support	MIPR	JPM NBC CA, APG, MD	U	0	1010	2Q FY05	0	NONE	0	NONE	0	1010	0
JBTDS													
PM/MS SB - Milestone B Preparation and Acquisition Documentation Development	MIPR	JPM BD, APG, MD	U	0	0	NONE	0	NONE	800	1Q FY07	0	800	0
JCBRAWM													
PM/MS S - Joint Service Support	MIPR	Various	U	0	72	3Q FY05	552	2Q FY06	0	NONE	0	624	0
NTA													
PM/MS SB - Support Services	MIPR	Various	U	160	300	1Q FY05	0	NONE	0	NONE	0	460	0
PAWSS													
PM/MS S - Program Management	MIPR	JPM NBC CA, APG, MD	U	887	431	2Q FY05	0	NONE	0	NONE	0	1318	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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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
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio													
pBSCAV - Program Management Support	Allot	Chemical Bio Medical Systems, Frederick, MD	U	0	500	4Q FY05	0	NONE	0	NONE	0	500	0
EOS (Epidemic Outbreak Surveillance) - Program management/logistics support.	MIPR	JPM-NBC-CA, APG, MD	U	0	70	2Q FY05	0	NONE	0	NONE	0	70	0
EOS (Epidemic Outbreak Surveillance) - Assess technologies	SS/FFP	SAIC, San Diego, CA	C	0	100	3Q FY05	0	NONE	0	NONE	0	100	0
EOS (Epidemic Outbreak Surveillance) - Assess technologies	MIPR	TBS - Air Force	U	0	700	2Q FY06	0	NONE	0	NONE	0	700	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	299	NONE	0	NONE	0	299	0
Subtotal IV. Management Services:				2936	4581		851		800		0	9168	

Remarks: TT Bio - pBSCAV funding continues in FY06 and FY07, but is located under MC4, Medical Chemical Defense.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
CA4

TOTAL PROJECT COST:	7464	50885		31140		1000		0	90489	

Exhibit R-4a, Schedule Profile

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
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PROJECT
CA4

D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
ARTEMIS																																
Complete Input to MIT Chem Standoff Analysis						2Q	—	4Q																								
Provide Close Out Documentation							3Q	4Q																								
JBPDS																																
Milestone (MS) C - LRIP			3Q	—	—	2Q																										
Block I First Unit Equipped (FUE)	1Q																															
Select JBPDS LRUs for Upgrade						2Q																										
Design and Validate selected Upgrades						2Q	—	—	—	—	—	4Q																				
ECP/Sys Documentation for Upgrade via Spares												4Q	—	2Q																		
Multi-service Operational Test and Evaluation (IOT&E) (Phase VI) FOT&E														2Q	3Q																	
Whole System Live Agent Test								4Q	—	—	—	—	—	2Q																		
MS C Full Rate Production Decision																			3Q	4Q												
JBPDSBLK2																																
Methodology Development and Testing		2Q	—	—	—	—	—	—	—	—	—	4Q																				

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JBPDSBLK2 (Cont)																																
Modeling and Simulation				4Q								4Q																				
Design and Development of WSLAT Facilities					1Q							4Q																				
Standardization of Challenge Materials							3Q		1Q																							
WSLAT Record Test in Support of JBPDS												4Q			3Q																	
JBTDS																																
Milestone A Decision														2Q																		
Market Survey														2Q	3Q																	
System Engineering Trade Study														2Q		4Q																
CDD															3Q				3Q													
MS B Doc Prep																4Q				4Q												
MS B Decision																					1Q											
SDD																					1Q							4Q				
Milestone C Decision																													1Q			
DT/OT																									1Q							4Q
JCBRAWM																																

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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							3Q			2Q																						
6.4 Contractor Test & Evaluation Efforts							3Q					4Q																				
NTA																																
NTA Tradeoff Studies		2Q		4Q																												
Conduct Technology Down-select			3Q			2Q																										
Integrate Technologies on First Selected Detector				4Q				4Q																								
Developmental Testing of Detector Technologies				4Q								4Q																				
Integrate Technologies on Other Detectors								4Q				4Q																				
Development of Chamber Test Methodology										2Q	3Q																					
Chamber Test Equipment Purchase/Fabrication										2Q	3Q																					
Equipment/Chamber Validation											3Q	4Q																				
PAWSS																																

Exhibit R-4a, Schedule Profile

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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
CA4

D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
PAWSS (Cont)																																
Modeling and Simulation				4Q			3Q																									
Limited Technology Demonstration							3Q																									
Technology Demonstration Report								4Q		2Q																						
TT Bio																																
Developmental Testing (DT)						2Q	3Q																									
pBSCAV - Milestone A				4Q																												
pBSCAV - Conduct Small-Scale Manufacturing, Process Development, & Assay Qualification							3Q						1Q																			
pBSCAV - Investigational New Drug (IND) Application								4Q			3Q																					
pBSCAV - Conduct Pre-Clinical Studies									1Q		3Q																					
pBSCAV - Conduct Phase 1 Clinical Safety Study											3Q				3Q																	
EOS - Development/Assay Validation Efforts						2Q	3Q																									

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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
CM4

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CM4	HOMELAND DEFENSE (ACD&P)	365	11086	0	0	0	0	0	0	11451

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) Block I and Unified Command Suite (UCS) Increment I upgrades. In addition, this project funds the development of COTS Training Devices in support of the WMD CST mission and initiation of the Military Mail Screening Program (MMSP).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
MILITARY MAIL SCREENING PROGRAM	365	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 365 MMSP - Examined mail processes and mail flow throughout numerous DoD installations and USPS (United States Postal Service) Distribution Centers.

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

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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
CM4

FY 2005 Accomplishments (Cont):
Total 365

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	8417	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 8417 TT Bio - Congressional Interest Item - Countermeasures to Chemical and Biological Threats/ Rapid Response.

Total 8417

	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	0	2561	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 2411 WMD-CST - Conduct component testing of Commercial off-the-shelf (COTS) detection, protection and decontamination equipment.

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

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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
CM4

FY 2006 Planned Program (Cont):

- 150 WMD-CST - Provide Government Engineering and Planning Support.

Total 2561

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	108	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 108 SBIR

Total 108

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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
CM4

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CM5 HOMELAND DEFENSE (SDD)	8754	390	0	0	0	0	0	0	9144
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1313	1536	1533	0	0	0	0	0	4382
JS0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	13290	53499	9214	0	0	0	0	0	76003
JS0500 CB INSTALLATION FORCE PROTECTION PROGRAM	91160	141793	76943	84849	90369	63634	61899	Cont	Cont

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

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RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
CM4

D. Acquisition Strategy:

MMSP

MMSP - Military Mail Screening Program. The Program utilizes a spiral development acquisition strategy in order to implement the screening of all mail within the military mail system in order to detect the presence of biological, chemical, or radiological weapons, agents, or pathogens or explosive devices before mail within the military mail system is delivered to its intended recipients and to ensure the mail is safe for delivery.

WMD CST

This program utilizes multiple acquisition vehicles to deliver a CBRN capability to the WMD CSTs and the USAR Reconnaissance/Decontamination Platoons.

UCS Increment I:
The UCS Increment I program consists of the integration of additional Command, Control, Communication, Computer, and Intelligence (C4I) equipment and Non-Developmental Items (NDI) to allow the UCS system to meet all objective requirements as outlined in the validated Capability Production Document (CPD).

ALS Increment I:
The ALS Increment I 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 in the Operational Requirements Document (ORD).

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PROJECT
CM4

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).

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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
CM4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MMSP													
MMSP - Examine mail processes	MIPR	DTRA, Fort Belvoir, VA (Contractor TBS)	C	0	365	2Q FY06	0	NONE	0	NONE	0	365	0
TT Bio													
TT Bio - Threats/Rapid Response	SS/FP	TBS	C	0	0	NONE	8417	4Q FY06	0	NONE	0	8417	0
Subtotal I. Product Development:				0	365		8417		0		0	8782	

Remarks: MMSP - Additional Military Mail Screening Program funds executed under FY05, TT Bio, CA4.

II. Support Costs: Not applicable

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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
CM4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
OTHT SB - COTS Chem Bio Detection Protection Validation Testing	MIPR	TBS	U	0	0	NONE	2411	2Q FY06	0	NONE	0	2411	0
Subtotal III. Test and Evaluation:				0	0		2411		0		0	2411	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
CM4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
PM/MS SB - COTS Chem Bio Detection Protection Validation Testing	MIPR	Aberdeen Proving Ground, MD	U	0	0	NONE	150	1Q FY06	0	NONE	0	150	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	108	NONE	0	NONE	0	108	0
Subtotal IV. Management Services:				0	0		258		0		0	258	
TOTAL PROJECT COST:				0	365		11086		0		0	11451	

Remarks:

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
MMSP																																
MMSP - Review of DoD and USPS Distribution Centers									1Q	2Q																						
WMD CST																																
ALS INCREMENT I PROGRAM	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1Q															
Incr I - Component Testing										2Q																						
Incr I - System Verification Test												4Q																				
Incr I - Production												4Q	—	—	—	—	1Q															
UCS INCREMENT I PROGRAM	1Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2Q													
Incr I - Prototyping-Platform Installation						2Q	—	4Q																								
Incr I - Developmental Testing (DT)									1Q																							
Incr I - Operational Assessment (OA)										2Q																						
Incr I - Award Production											3Q	—	—	—	—	—	—	—	2Q													
COTS - GOTS PROGRAM	>>	—	—	—	—	—	—	—	—	—	—	4Q																				
Testing - Phase II HAPSITE Multi-Service				4Q	—	—	—	—	1Q																							

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 (cont):	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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 (Cont)								
Testing - COTS Detection, Protection, Decontamination Equipment Validation Testing			1Q — 4Q					

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CO4	COLLECTIVE PROTECTION (ACD&P)	0	7472	0	0	0	0	0	0	7472

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 war-fighter or a group of war-fighters regardless of the contamination levels outside the protected area.

System funded under this project is: (1) Joint Expeditionary Collective Protection (JECP).

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

DATE
February 2006

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

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 is a new start program that will address the need to reduce size, weight, power consumption, and logistics footprint of current CP systems, equipment and/or components. JECP will provide a portable and adaptable CP capability to protect and sustain the Joint Expeditionary Force and allow them to operate safely, at near-normal levels of effectiveness and efficiency, while under a Chemical, Biological, Radiological, and Nuclear (CBRN) threat or hazard area.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	0	7399	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 817 JECP - Conduct an Analysis of Alternatives (AoA) leveraging the market survey, test results, and lessons learned from the FY05 ColPro Technology Readiness Evaluation (TRE). Collaborate with the JRO Shield Integrator in preparing acquisition documentation and decision review package for Milestone (MS) A. Provide subject matter expert support to the Joint Requirements Office (JRO) in development of the Concept of Operation (ConOps) and the Capability Development Document (CDD).

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

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February 2006

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

FY 2006 Planned Program (Cont):

- 3195 JECP - Leverage the findings of the ColPro TRE and the AoA for the basis of selected technology demonstrations. The purpose of the technology demonstrations is to mitigate risk and identify affordable mature technologies that individually or together meet the warfighters needs. Technologies to be demonstrated include, but may not be limited to; new filtrations systems, quick erect liners, airlocks, contamination control areas, and complete portable shelter systems. The Systems Engineering Working Integrated Product Team (SE WIPT) will work closely with the System Management Office (SMO) to plan, procure, test, and oversee all of the selected technology demonstrations.
- 995 JECP - Establish the Test & Evaluation Working-level IPT (TE WIPT) to lead all aspects of the JECP test program including but not limited to the Test & Evaluation Master Plan (TEMP), Operational Assessments (OA), Developmental Testing (DT), and coordination with the Operational Test Agency (OTA) for Operational Testing (OT). The TE WIPT will coordinate with 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 proposed system testing.
- 900 JECP - Establish the Systems Engineering Working-level IPT (SE WIPT) to be 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 will be the lead for all performance and technical related efforts and issues associated with JECP. Major tasks include developing and maintaining a System Engineering Plan, Work Breakdown Structure (WBS), system architecture, System Performance Specification, Technology Development Strategy, and oversee all technology demonstrations.

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

DATE
February 2006

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

FY 2006 Planned Program (Cont):

- 1492 JECP - Establish the Systems Management Office (SMO) to oversee the day-to-day program execution including overall guidance and direction to the JECP IPT, financial management and tracking, budget preparation, schedule planning and monitoring, generation of acquisition documentation to support milestone decisions and JPEO/JPM reporting requirements. The SMO will lead 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.

Total 7399

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	73	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 73 SBIR

Total 73

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

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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
CO4

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CO5 COLLECTIVE PROTECTION (SDD)	2460	662	12581	21450	28306	20466	18826	Cont	Cont
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	9338	10377	8833	3645	5217	0	0	0	37410
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	5962	0	0	0	0	0	0	0	5962
JP0911 CP FIELD HOSPITALS (CPFH)	0	4800	4089	3455	3430	3549	3626	Cont	Cont
JP1111 JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)	0	0	0	0	5069	6305	8240	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	25676	16237	30586	31051	32001	33118	33827	Cont	Cont

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

DATE
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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
CO4

D. Acquisition Strategy:

JECP

Pursue an incremental development strategy based on 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, exercise a contract option 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, compete 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 2006

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	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
HW S - Technology Demonstrators	C/CPIF	TBS	C	0	0	NONE	3195	2Q FY06	0	NONE	0	3195	0
HW S - Systems Engineering	MIPR	Various	U	0	0	NONE	900	1Q FY06	0	NONE	0	900	0
Subtotal I. Product Development:				0	0		4095		0		0	4095	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
TD/D S - Milestone Documentation	MIPR	Various	U	0	0	NONE	417	1Q FY06	0	NONE	0	417	0
TD/D S - AoA	C/FP	CBRTA Independent Assessments and Evaluations, Arlington, VA	C	0	0	NONE	400	1Q FY06	0	NONE	0	400	0
Subtotal II. Support Costs:				0	0		817		0		0	817	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
DTE S - Technology Demonstration	C/CPIF	TBS	C	0	0	NONE	995	3Q FY06	0	NONE	0	995	0
Subtotal III. Test and Evaluation:				0	0		995		0		0	995	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
CO4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
PM/MS S - Project Management Office (PMO) and IPT Support	MIPR	Various	U	0	0	NONE	1492	1Q FY06	0	NONE	0	1492	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	73	NONE	0	NONE	0	73	0
Subtotal IV. Management Services:				0	0		1565		0		0	1565	
Remarks:													
TOTAL PROJECT COST:				0	0		7472		0		0	7472	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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																					
Complete CDD											3Q																					
SOO and DRAFT P-Spec											3Q																					
Procurement of Technology Demonstrators										2Q	3Q																					
Technology Demonstration Testing											3Q	—	1Q																			
MS-B Decision													1Q																			

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

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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
CP4

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CP4	COUNTERPROLIFERATION SUPPORT (ACD&P)	15853	24239	25452	26152	15083	14344	26674	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CP4 COUNTERPROLIFERATION SUPPORT (ACD&P): Providing full dimensional protection to deployed forces and critical fixed sites, to include Sea Ports of Debarkation (SPODs) under threat of chemical or biological attack is one of the highest Combatant Commanders' highest priorities. Future adversaries will likely use CB weapons to deny U.S. and allied forces use of these facilities. U.S. forces, both mobile and at fixed sites, must be able to survive CB attacks and quickly recover to continue operations. This project supports the accelerated fielding of operational capabilities (technology, Concept of Operations (CONOPS), and automation tools) to Combatant Commanders through Advanced Concept Technology Demonstrations (ACTDs) and Advanced Technology Demonstrations (ATDs).

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 will demonstrate those mitigating actions needed before, during and after an attack to protect against and immediately react to the consequences of a CB attack. These actions are aimed at restoring operating tempo (OPTEMPO) in mission execution and the movement of individuals and materiel to support combat operations at a seaport in an overseas Central Command (CENTCOM) Area of Responsibility (AOR).

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

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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
CP4

The Biological Warfare Countermeasures Initiatives (BWCI) effort began when the Commander of the Pacific Command (PACOM) requested assistance from Under Secretary of Defense for Acquisition, Technology, and Logistics (DUSD (AT&L)) and the Chairman, Joint Chiefs of Staff (CJCS) to address Biological Warfare concerns in the PACOM area of operation. Recommended actions included conducting a risk assessment, providing planning guidance, assessing key lessons, and proposing a way ahead. The Deputy Under Secretary of Defense for Advanced Systems and Concepts (DUSD (AS&C)) responded and identified a three-phase approach to be implemented over three fiscal years. The three-phased approach is as follows: (1) Phase I (FY03) - Defined the problem(s); (2) Phase II (FY04) - developed solutions to include a fusion cell approach and force protection initiatives; and (3) Phase III (FY05) - Implementation Advanced Technology Demonstrations (ATD) and experiments to demonstrate solution sets identified during Phase II such as fusion cell, medical surveillance, force protection condition triggers, infrared scanning devices and other concepts.

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

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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
CP4

The Counterproliferation Support Program ACTD is executing an FY05 ACTD called Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR). CUGR will address several critical operational issues to enhance the speed, effectiveness, capabilities, and automation of surface and area CBRN contamination detection and identification. The ACTD technologies will be used to enhance the Joint Service Light NBC Reconnaissance System (JSLNBCRS) and the FOX NBC Reconnaissance system 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, Non-Traditional Agents (NTAs) and Toxic Industrial Chemicals (TICs). The technology has the potential to detect biological warfare agents and offers a new capability to conduct unmanned CBRN reconnaissance. A new thrust area for ACTD small CBRN unmanned ground reconnaissance platform will be added to the JSLNBCRS. 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 Counterproliferation Support Program will initiate two ATDs in FY06. The Chemical Biological Training System will be demonstrated at Ft Leonard Wood and will demonstrate Commercial off-the-shelf systems in use in the United Kingdom for military training of soldiers on Chemical and Biological Defense. The Chemical Biological Networked Early Warning System (CBNEWS) ATD will test existing battlefield radar systems and demonstrate their use as Chemical detection and warning devices.

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
CP4

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
COUNTERPROLIFERATION ACTD	15853	23999	25452
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 730 Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - Initiated program management and planning, documentation, Integrated Product Team (IPT) meetings, technical liaisons and transition planning.
- 1412 CUGR ACTD - Initiated Concepts-of-Operations (CONOP) and techniques, tactics, and procedures (TTP) development, operational test planning and execution.
- 1119 CUGR ACTD - Initiated Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing.
- 5764 CUGR ACTD - Initiated JCSD prototyping, technical testing and integration.
- 266 CUGR ACTD - Initiated modification of Joint Service Light Nuclear Biological Chemical Reconnaissance System (JSLNBCRS) shelter design, fabricate and integrate on High Mobility Multipurpose Wheeled Vehicles (HMMWVs).
- 1784 CUGR ACTD - Initiated CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration.

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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
CP4

FY 2005 Accomplishments (Cont):

- 1421 Contamination Avoidance at Seaports of Debarkation (CASPOD) ACTD (DTO JD23) (BCA#34) - Executed residual support for CASPOD fielded technologies.
- 1684 CASPOD ACTD (DTO JD23) (BCA#34) - Completed transition planning, acquired logistics support, and completed logistics support planning.
- 1173 Biological Warfare Countermeasures Initiatives (BWCI) - Supported United States Pacific Command (PACOM) Biological Warfare Countermeasures Initiative.
- 500 Chemical Biological Defense Program Initiative Fund.

Total 15853

FY 2006 Planned Program:

- 1500 Contamination Avoidance at Seaports of Debarkation (CASPOD) ACTD (DTO JD23) (BCA#34) - Complete procurement and contractor logistics support services for residual support on selected technologies.
- 1500 CASPOD ACTD (DTO JD23) (BCA#34) - Finalize lessons learned, incorporate into ACTD final report, complete service doctrinal changes and techniques, tactics, and procedures changes.

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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
CP4

FY 2006 Planned Program (Cont):

- 4114 Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - Continue program management and planning, documentation, IPT meetings, technical liaisons and transition planning. Continue Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing. Continue modification of JSLNBCRS shelter design, fabricate and integrate on HMMWVs.
- 5300 CUGR ACTD - Continue Concepts-of-Operations (CONOP) and techniques, tactics, and procedures (TTP) development, operational test planning and execution. Continue CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration.
- 5711 CUGR ACTD - Complete JCSD prototyping, technical testing and integration.
- 1000 CUGR ACTD - Initiate CUGR residual support for extended user evaluation.
- 2437 Chemical Biological Training System (CBTS) ATD - Demonstrate Chemical Biological Training System for use at Ft. Leonard Wood.
- 2437 Chemical Biological Networked Early Warning System (CBNEWS) - Initiate test and demonstration of tactical radar for early tactical warning of chemical attack.

Total 23999

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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
CP4

FY 2007 Planned Program:

- 965 Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - Continue program management and planning, documentation, Integrated Product Team (IPT) meetings, technical liaisons and transition planning.
- 5000 CUGR ACTD - Continue Concepts-of-Operations (CONOPs) and techniques, tactics, and procedures (TTPs) development, operational test planning and execution.
- 378 CUGR ACTD - Complete Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing. Complete modification of JSLNBCRS shelter design, fabricate and integrate on HMMWVs.
- 907 CUGR ACTD - Complete CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration.
- 500 CUGR ACTD - Continue CUGR residual support for extended user evaluation.
- 2767 Situational Awareness and Response Network (STARNET) ACTD - Initiate Combatant Commands (COCOM) information technology system for biological defense fusion cell, develop prototype medical surveillance integration module for Joint Operational Effects Federation (JOEF) Information Technology system.
- 3025 STARNET ACTD - Initiate prototype sensor fusion integration module for Joint Operational Effects Federation (JOEF) Information Technology system.
- 3121 STARNET ACTD - Initiate prototype Chemical Biological Defense systems readiness module.

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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
CP4

FY 2007 Planned Program (Cont):

- 432 STARNET ACTD - Initiate prototype Chemical Biological Radiological Nuclear knowledge module.
- 3841 Chemical Biological Networked Early Warning System (CBNEWS) ATD - Complete radar system and algorithm system integration for technology demonstration.
- 4516 CBNEWS ATD - Complete technology demonstration and test and evaluation.

Total 25452

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	240	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 240 SBIR

Total 240

C. Other Program Funding Summary: N/A

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

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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
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 FY05, 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. No ACTD candidate was selected for FY06, in its place three leading candidates TCARS, STARNET, and CBNEWS ACTD proposals were revised to ATDs or experimentation to be coordinated with the BA6, O49, Joint Concept Development and Experimentation effort for FY06 and FY07. An additional ATD proposal for CB Training System is being planned for FY06 as an ATD. CBNEWS will be executed as a CBDP ATD vice and ACTD. STARNET and TCARS will be subject to more studies and experimentation with subsequent planning for STARNET as an FY07 ACTD.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
HW C - CUGR - CSD System Design and Integration	C/CPFF	ITT, Colorado Springs, CO	C	0	1119	2Q FY05	1745	2Q FY06	327	2Q FY07	0	3191	0
HW C - CUGR CSD - Begin Prototype Shelter Assembly	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	266	2Q FY05	345	2Q FY06	98	2Q FY07	0	709	0
HW C - CUGR - UGV - Initiate System Design and Integration	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	1784	1Q FY05	1333	2Q FY06	807	1Q FY07	0	3924	0
HW S - Develop CB Training system	WR	DTRA, Alexandria, VA	U	0	0	NONE	2280	2Q FY06	0	NONE	0	2280	0
HW S - Develop STARNET system	Allot	Air Force - AFRL - Wright Patterson AFB, OH	U	0	0	NONE	0	NONE	8994	2Q FY07	0	8994	0
HW S - Complete CBNEWS ATD	Allot	Army - RDECOM, Aberdeen Proving Ground, MD	U	0	0	NONE	2280	2Q FY06	8708	2Q FY07	0	10988	0
HW C - CUGR - JCSD Prototyping	Allot	Army - RDECOM, Aberdeen Proving Ground, MD	U	0	5764	2Q FY05	5711	2Q FY06	0	NONE	0	11475	0
CBDP Initiative Fund	C/FP	TBS	C	0	500	3Q FY06	0	NONE	0	NONE	0	500	0
Subtotal I. Product Development:				0	9433		13694		18934		0	42061	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
ILS C - CUGR CONOPS Development	Allot	PACOM - USA Army Pacific, Fort Shafter, HA	U	0	415	1Q FY05	515	2Q FY06	580	1Q FY07	0	1510	0
ILS C - CUGR CONOPS and doctrine development	Allot	USA Chemical School Ft Leonard Wood, MO	U	0	997	1Q FY05	700	2Q FY06	122	1Q FY07	0	1819	0
ILS S - CASPOD Complete residual support	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	1421	2Q FY05	1500	2Q FY06	0	NONE	0	2921	0
ILS S - CASPOD Finalize doctrine and lessons learned	Allot	Army - CHEMSCHOOL, Ft Leonard Wood MO	U	0	1684	2Q FY05	1500	2Q FY06	0	NONE	0	3184	0
ILS C - CUGR - JCSD Residual Support	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	263	2Q FY06	549	1Q FY07	0	812	0
Subtotal II. Support Costs:				0	4517		4478		1251		0	10246	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
CP4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
OTE C - OTE C - CUGR Operational Test for JCSD	Allot	Army Test and Evaluation Command - Alexandria, VA	U	0	0	NONE	4886	2Q FY06	4302	1Q FY07	0	9188	0
Subtotal III. Test and Evaluation:				0	0		4886		4302		0	9188	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CPSP ACTD													
PM/MS S - CUGR Program Management	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	730	2Q FY05	941	2Q FY06	965	2Q FY07	0	2636	0
PM/MS S - BWCI - Program Management	MIPR	PACOM - Camp Smith Hawaii	U	0	1173	1Q FY05	0	NONE	0	NONE	0	1173	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	240	NONE	0	NONE	0	240	0
Subtotal IV. Management Services:				0	1903		1181		965		0	4049	

Remarks:

TOTAL PROJECT COST:	0	15853		24239		25452		0	65544	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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																																
CUGR JCSD Demonstration											3Q	4Q																				
CUGR JCSD Residual Support													1Q	—	—	—	—	—	—	4Q												
CUGR CUGV Demonstration															3Q	4Q																
CUGR CUGV Residual Support																4Q	—	—	—	4Q												
CB Training System Demonstration									1Q	—	—	4Q																				
CBNEWS ATD Demonstration															3Q	4Q																

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
DE4	DECONTAMINATION SYSTEMS (ACD&P)	16950	998	2000	4517	2577	2278	4002	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DE4 DECONTAMINATION SYSTEMS (ACD&P): This ACD&P funding 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 Service Family of Decontamination Systems (JSFDS), Joint Service Sensitive Equipment Decontamination (JSSED) and Joint Platform Interior Decontamination (JPID) programs.

The funding for JSFDS covers the Joint Service Personnel/Skin Decontamination System (JSPDS) and Joint Service Transportable Decontamination Systems, Small-scale (JSTDS-SS) programs. These programs will provide the warfighter with an enhanced fixed site and personnel decontamination capability.

The JSSED program will perform sensitive equipment/item decontamination.

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

DATE
February 2006

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

The JPID program will fill an immediate need to decontaminate chemical and biological warfare agents from vehicle/aircraft/buildings interiors, and associated cargo. The JPID program will utilize incremental and spiral approaches to address individual key capabilities to reduce program risk and support production schedule.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JS FAMILY OF DECON SYSTEMS (JSFDS)	10801	989	2000
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3990 JSFDS/JSTDS-SS - Performed down-selection testing (DT I) on four candidate JSTDS-SS decontamination systems for Low Rate Initial Production (LRIP) contract award. DT I included live agent efficacy testing, material compatibility testing, and reliability testing.
- 370 JSFDS/JSTDS-SS - Developed logistics documentation and performed training to support testing for JSTDS-SS.
- 2400 JSFDS/JSTDS-SS - Updated Single Acquisition Management Plan (SAMP), Test and Evaluation Master Plan (TEMP) and other program documentation to support Milestone C Low Rate Initial Production (LRIP) for JSTDS-SS.
- 510 JSFDS/JSTDS-SS - Performed an operational assessment on candidate JSTDS-SS decontamination systems.

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

DATE
February 2006

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

FY 2005 Accomplishments (Cont):

- 1850 JSFDS/JSPDS - Performed developmental packaging testing, compatibility testing and a clinical safety study on JSPDS.
- 1681 JSFDS/JSPDS - Updated SAMP, TEMP and other program documentation to support Milestone B for JSPDS.

Total 10801

FY 2006 Planned Program:

- 204 JSFDS (T&E Capability) - Overarching Decontamination Model throughout RDT&E - Develop a model to predict contamination-caused hazards for all phases of chemical and biological threats.
- 785 JSFDS (T&E Capability) - Develop and validate chemical decontamination test methods for full-system tests.

Total 989

FY 2007 Planned Program:

- 300 JSPDS (T&E Capability) - Upgrade and Standardize Laboratory Decontamination Test Methods - Develop and validate standardized, common test and analysis methods that will yield performance data that can be used across DoD.
- 1700 JSSED/JPID (T&E Capability) - Certify chamber fixtures for use with biological agents, develop and validate biological decontamination methods for subsequent use in the Biological Decontamination Chamber.

Total 2000

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

DATE
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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
DE4

	FY 2005	FY 2006	FY 2007
JS SENSITIVE EQUIP DECON	6149	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 2700 JSSED - Designed and fabricated prototypes for Limited Objective Experiment (LOE) (Six units at $450K each).
- 600 JSSED - Designed and fabricated prototypes of pre-clean kits for LOE.
- 1768 JSSED - Coordinated, managed and executed LOE for JSSED.
- 450 JPID - Coordinated, managed and executed SED LOE.
- 375 JPID - Continued studies for interior platform material identification, characteristics/market analysis.
- 256 JPID - Planned, managed and conducted JPID technical demonstration.

Total 6149

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	9	0
RDT&E Articles (Quantity)	0	0	0

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

DATE
February 2006

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

FY 2006 Planned Program:

- 9 SBIR

Total 9

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
DE5 DECONTAMINATION SYSTEMS (SDD)	4169	16496	11050	5397	15053	15353	7365	Cont	Cont
JD0055 JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM (JSPDS)	0	0	9584	12775	0	0	0	0	22359
JD0056 JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)	0	2911	7209	11343	13432	18970	23889	Cont	Cont
JD0061 JOINT SERVICE SENSITIVE EQUIPMENT DECON (JSSED)	0	0	0	0	6860	6991	6591	Cont	Cont

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

DATE
February 2006

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:

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.

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) predecessor system. 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.

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

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
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JSSED

The JSSED program will execute an evolutionary acquisition strategy with a two-increment approach. The first increment provides capabilities required by the ORD. The second increment will incorporate additional capabilities as more funding becomes available. Increment I is a four-step approach. The first step is the Optimization Phase that will focus on the decontaminant for the JSSED system. The second step is the System Integration of the JSSED Increment I. The third step is the production phase of the JSSED Increment I variant. The fourth and final step is the spiral development of the JSSED shipboard variant. It will include two sub-phases, shipboard System Integration and shipboard production. A limited objective experiment (LOE) will be conducted prior to system integration. The LOE will allow the combat developers to operate prototype hardware and to provide input to system integration design.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
HW S - JSFDS Systems for JSTDS-SS Down-selection Testing	C/FFP	Various	C	0	1061	2Q FY05	0	NONE	0	NONE	0	1061	0
JSSED													
HW S - JSSED LOE prototype build	C/CPFF	Battelle Memorial Institute, Aberdeen MD	C	0	799	2Q FY05	0	NONE	0	NONE	0	799	0
HW S - JSSED LOE prototype build	C/CPFF	Guild Associates, Dublin OH	C	0	799	2Q FY05	0	NONE	0	NONE	0	799	0
SW SB - JSSED Develop Pre-Clean Capability	C/CPFF	TBS	C	2000	1000	2Q FY05	0	NONE	0	NONE	0	3000	0
HW S - JPID Material Identification and Analysis for JPID	C/CPFF	Battelle Memorial Institute, San Antonio, TX	C	0	400	3Q FY05	0	NONE	0	NONE	0	400	0
Subtotal I. Product Development:				2000	4059		0		0		0	6059	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
ILS S - JSFDS Documentation and analysis for JSPDS	MIPR	Various	U	400	681	1Q FY05	0	NONE	0	NONE	0	1081	0
ILS S - JSFDS Documentation and analysis for JSTDS-SS	MIPR	Various	U	300	530	1Q FY05	0	NONE	0	NONE	0	830	0
JSSED													
TD/D S - JPID - Technical demonstration and market analysis	Allot	HSG, Brooks City-Base, TX	U	0	261	2Q FY05	0	NONE	0	NONE	0	261	0
Subtotal II. Support Costs:				700	1472		0		0		0	2172	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
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PROJECT
DE4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
DTE S - JSFDS - JSTDS-SS Down-selection Testing (DT I)	MIPR	Various	U	0	1689	1Q FY05	0	NONE	0	NONE	0	1689	0
DTE S - JSFDS - JSTDS-SS Down-selection Testing (DT I)	C/CPFF	Battelle, Columbus, OH	C	0	600	1Q FY05	0	NONE	0	NONE	0	600	0
OTHT S - JSFDS - JSTDS-SS test planning	MIPR	Various	U	250	400	1Q FY05	0	NONE	0	NONE	0	650	0
OTHT S - JSFDS - JSTDS-SS test planning	C/CPFF	Various	C	650	240	1Q FY05	0	NONE	0	NONE	0	890	0
OTHT S - JSTDS/JSSED/JPID/JSPDS	MIPR	Various	U	0	0	NONE	989	1Q FY06	2000	1Q FY07	0	2989	0
OTE S - JSFDS-JSTDS-SS Operational Assessment	MIPR	Army Operational Test Command, Ft. Hood, TX	U	0	510	1Q FY05	0	NONE	0	NONE	0	510	0
DTE S - JSFDS-JSPDS Developmental Test	MIPR	Various	U	0	900	1Q FY05	0	NONE	0	NONE	0	900	0
DTE S - JSFDS-JSPDS Developmental Test	C/CPFF	Battelle, Columbus, OH	C	0	950	1Q FY05	0	NONE	0	NONE	0	950	0
JSSED													
OTHT SB - JSSED - Block I Testing	MIPR	Various	U	684	202	1Q FY05	0	NONE	0	NONE	0	886	0
DTE S - JSSED Developmental Planning	MIPR	AFOTEC, Kirtland AFB, NM	U	1337	500	2Q FY05	0	NONE	0	NONE	0	1837	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
DE4

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal III. Test and Evaluation:				2921	5991		989		2000		0	11901	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
PM/MS S - JSFDS - JSPDS Programmatic Support - acquisition documentation development	C/CPFF	Various	C	150	500	1Q FY05	0	NONE	0	NONE	0	650	0
PM/MS S - JSFDS - JSTDS-SS Programmatic Support - acquisition documentation development	MIPR	Various	U	190	1265	1Q FY05	0	NONE	0	NONE	0	1455	0
PM/MS S - JSFDS - JSTDS-SS Programmatic Support - acquisition documentation development	C/CPFF	Various	C	139	975	1Q FY05	0	NONE	0	NONE	0	1114	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
DE4

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - JSFDS - JSPDS Programmatic Support - acquisition documentation development	MIPR	Various	U	0	500	1Q FY05	0	NONE	0	NONE	0	500	0
JSSED													
PM/MS C - JSSED LOE	MIPR	Various	U	0	1768	2Q FY05	0	NONE	0	NONE	0	1768	0
PM/MS S - JPID - Services Integrated Product Team Support	MIPR	Various	U	0	150	1Q FY05	0	NONE	0	NONE	0	150	0
PM/MS SB - JPID - SED LOE	MIPR	Various		0	270	2Q FY05	0	NONE	0	NONE	0	270	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	9	NONE	0	NONE	0	9	0
Subtotal IV. Management Services:				479	5428		9		0		0	5916	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

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DE4

TOTAL PROJECT COST:	6100	16950		998		2000		0	26048	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JSFDS								
JSFDS Restructuring of Requirements/ORD Acquisition Strategy	>> 2Q							
JSFDS Requirement feasibility and acquisition strategy development	1Q — 4Q							
JSFDS Compatibility Testing for JSPDS	2Q 3Q							
JSFDS Multi-purpose Decontamination System Reliability Testing	2Q — 4Q							
JSFDS Milestone (MS) B for JSPDS	3Q							
JSFDS Developmental Testing (DT) II for JSPDS	1Q —	— 4Q						
JSFDS RFP Release for JSTDS-SS	3Q							
JSFDS Procure test articles for JSTDS-SS down-selection testing	4Q							
JSFDS Paper down-selection for JSTDS-SS	4Q							
JSFDS MS B for JSTDS-SS	4Q							
JSFDS Down-selection testing (DT I) for JSTDS-SS		1Q — 3Q						

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JSFDS (Cont)																																
JSFDS MS C (LRIP) for JSTDS-SS							3Q																									
JSFDS DT II for JSTDS-SS								4Q																								
JSFDS Funding Transition								4Q																								
JSSED																																
Phase I - Optimization of Fluid System	>>	—	—	—	—	—	—	4Q																								
Phase I - Pre Clean Decontamination System			3Q	—	—	—	—	4Q																								
Phase I - Pre Clean Military Utility Test						2Q	3Q																									
Phase I - Design and fabricate prototypes for LOE (6 units at $450K each)					1Q	—	3Q																									
Phase I - Conduct LOE							3Q																									
Phase I - IPR for LOE Decision								4Q																								
JPID - Plan and conduct SED LOE						2Q	—	—	1Q																							
JPID - Technology Demonstration						2Q	—	4Q																								

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
IS4	INFORMATION SYSTEMS (ACD&P)	5750	3000	0	0	0	0	0	0	8750

A. <u>Mission Description and Budget Item Justification:</u>

Project IS4 INFORMATION SYSTEMS (ACD&P): This Advanced Component Development and Prototypes (ACD&P) funding supports Component Advanced Development and System Integration (CAD/SI) for JOEF.

JOEF will be a near real-time course of action analysis tool developed in three blocks using a detailed NBC hazard prediction model. Each block 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 I will support deliberate planning for operational and strategic users in a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) common operating environment (COE) and crisis planning for the operational users in a COE.

Increment II will support deliberate and crisis planning for the tactical users in a COE, Non-COE, and Non-Networked environment; deliberate planning for operational and strategic users in a Non-COE; crisis planning for the operational users in a Non-COE; and crisis planning for the strategic users in a COE. The second increment supports planning for consequence management and development of consequence management for military capabilities.

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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
IS4

Increment III will support deliberate planning for operational and strategic users in a Non-Networked environment; crisis planning for operational users in a Non-COE; and crisis planning for strategic users in a Non-COE and Non-Networked environments. The third increment extends consequence management capabilities to include civilian facilities.

Note: JOEF was funded in FY04 under project CA4.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JOINT OPERATIONAL EFFECTS FEDERATION	5750	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 966 JOEF Block I - Conducted Interim Progress Review (IPR). Performed financial management, scheduling, planning, and financial and technical reporting. Used the EVMS process. Completed M/S B acquisition documentation.

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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
IS4

FY 2005 Accomplishments (Cont):

- 1546 JOEF Block I - Continued development of prototype. Enhanced Aerial Ports of Debarkation (APOD) and medical capabilities. Added Sea Ports of Debarkation (SPOD) capabilities. Designed open C4ISR architecture. Interfaced with standard Geographic Information Systems (GIS). Initiated the process of generating data tables in support of mobile force assessments using models that support the operational commands. Funded the System Engineering, Test and Evaluation, Warfighter and Logistics IPTs.
- 3238 JOEF Block I - Initiated design of mobile force and automated TTP capabilities to the prototype. Initiated the development of Graphical User Interface (GUI) compatible with JEM and JWARN. Improved the post-process capabilities for the JOEF Measures of Effectiveness. Prepared for MS B and subsequent transition program to system development and demonstration (SDD).

Total 5750

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	2971	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
IS4

FY 2006 Planned Program:

- 2971 TT Bio - Congressional Interest Item - E-Smart Threat Agent Network for Liberty Island.

Total 2971

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	29	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 29 SBIR

Total 29

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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
IS4

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	8809	5112	6544	21455	21570	22752	29033	Cont	Cont
IS5 INFORMATION SYSTEMS (SDD)	19884	73761	25838	17285	8812	5537	3274	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	994	1996	2058	1046	0	0	0	0	6094

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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
IS4

D. Acquisition Strategy:

JOEF

JOEF is a planning tool to support deliberate and crisis planning. JOEF will be a near real-time course of action analysis tool developed in three increments. It will use a detailed CBRN hazard prediction model. Each block 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 I will support deliberate planning for operational and strategic users in a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) common operating environment (COE)/Networked environment, Command and Control Personal Computers (C2PC), and crisis planning for the operational users in a COE/Networked environment.

Increment II will support deliberate and crisis planning for the tactical users in COE/Networked, and Non-Networked environments; deliberate planning for operational and strategic users in a Non-Networked environment; crisis planning for the operational users in a Non-Networked environment, and crisis planning for the strategic users in a COE Networked and Non-Networked environments. Increment II also supports planning for consequence management and development of consequence management for military capabilities.

Increment III will extend consequence management capabilities to include civilian facilities.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
SW S - Engineering Builds - Development, Design and Coding	C/CPIF	Cubic Applications, Inc., Lacy, WA	C	0	2477	1Q FY05	0	NONE	0	NONE	0	2477	0
SW S - Integration, Interoperability	MIPR	SPAWAR Systems Center, San Diego, CA	U	0	721	1Q FY05	0	NONE	0	NONE	0	721	0
TT Bio													
TT Bio - Network for Liberty Island	SS/FP	TBS	C	0	0	NONE	2971	4Q FY06	0	NONE	0	2971	0
Subtotal I. Product Development:				0	3198		2971		0		0	6169	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
ES S - Integrated Product Teams - System Engineering, Test, and Logistics	MIPR	Various	U	0	697	1Q FY05	0	NONE	0	NONE	0	697	0
Subtotal II. Support Costs:				0	697		0		0		0	697	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
DTE S - JOEF - Developmental Testing	MIPR	Various	U	0	480	3Q FY05	0	NONE	0	NONE	0	480	0
Subtotal III. Test and Evaluation:				0	480		0		0		0	480	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2006

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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
IS4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
PM/MS S - Program Mgt Office - Planning and Programming	MIPR	Various	U	0	1375	1Q FY05	0	NONE	0	NONE	0	1375	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	29	NONE	0	NONE	0	29	0
Subtotal IV. Management Services:				0	1375		29		0		0	1404	
Remarks:													
TOTAL PROJECT COST:				0	5750		3000		0		0	8750	

Exhibit R-4a, Schedule Profile

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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
IS4

D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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																																
Concept and Technology Development Phase	>>	—	—	—	—	—	—	—	1Q																							
Prototype Development		2Q	—	—	—	—	—	—	1Q																							
Focused Technology Assessment II (Mobile Forces)			3Q	4Q																												
Focused Technology Assessment III (Mobile Forces & Bus. Process Mgt. Models)							3Q	—	1Q																							
Increment I - Milestone B									1Q																							
Incr I - Award Systems Development and Demonstration (SDD) Contract									1Q	2Q																						
Incr I - Software Development									1Q	—	—	—	—	—	3Q																	
Incr I - Tech Reviews									1Q	—	—	—	—	—	—	—	1Q															
Incr 1 - Developmental Testing (DT) Build 1													1Q																			
Incr I - Operational Assessment															3Q																	
Incr 1 - Full Operational Capability																								4Q								

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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
MB4

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MB4	MEDICAL BIOLOGICAL DEFENSE (ACD&P)	24215	22574	0	71022	99435	138474	166246	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P): This project funds Advanced Component Development and Prototypes for vaccines, drugs, and diagnostic medical devices that are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. This project also funds special studies to develop, test, and evaluate novel vaccine formulations to reduce or eliminate injections and to protect U.S. forces from BW agents. Efforts for medical biological defense product development include establishing standards and reference material for manufacturing and preliminary safety studies in animals. This data (manufacturing process development, pilot lot manufacturing, and non-clinical safety/toxicology studies) are submitted in support of an Investigational New Drug (IND) application with the Food and Drug Administration (FDA) so that human studies to evaluate product safety and immunogenicity can be conducted. At the end of System Development and Demonstration (SDD), the product will transition to the Production and Deployment phase. Products being developed under the Joint Vaccine Acquisition Program (JVAP) include: Recombinant Botulinum, Plague (Yersinia Pestis), Equine Encephalitis and Ricin vaccines.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM INCREMENT II	2500	0	0
RDT&E Articles (Quantity)	0	0	0

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

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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
MB4

FY 2005 Accomplishments:

- 289 JBAIDS Increment II - Initiated down select process to determine commercial-off-the-shelf (COTS)/Non-Developmental Items (NDI) systems' potential applicability.
- 1577 JBAIDS Increment II - Purchased Government Furnished Material (GFM) to manufacture test samples, and initiated and completed Technology Readiness Assessment (TRA).
- 634 JBAIDS Increment II - Initiated source selection planning activities, technical specification development, and support activities.

Total 2500

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	2526	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 2526 TT Bio - Congressional Interest Item - Roll-on-Roll-Off Infection Control Facility.

Total 2526

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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
MB4

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER MEDICAL SYSTEMS	150	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 150 TT Med - Initiated medical technology transition, including clinical trials, of medical countermeasures against biological and chemical agents, including novel threat agents, for therapeutics, prophylaxes and pretreatments, and diagnostics capabilities.

Total 150

	FY 2005	FY 2006	FY 2007
BOTULINUM VACCINE	13335	1980	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 8534 JVAP - Recombinant Botulinum Vaccine - Completed manufacturing process scale-up and continued process validation efforts for serotypes A and B.

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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
MB4

FY 2005 Accomplishments (Cont):

- 3600 JVAP - Recombinant Botulinum Vaccine - Continued Phase 1 clinical trial for serotypes A and B and received interim report.
- 1201 JVAP - Recombinant Botulinum Vaccine - Continued non-clinical studies and continued stability testing for serotypes A and B.

Total 13335

FY 2006 Planned Program:

- 1980 JVAP - Recombinant Botulinum Vaccine - Initiate Phase 1B clinical trial and continue non-clinical studies.

Total 1980

	FY 2005	FY 2006	FY 2007
ENCEPHALITIS VACCINE	0	6810	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 6810 JVAP - Equine Encephalitis Vaccine - Continue Phase 1 clinical trial on the VEE 1 AB vaccine.

Total 6810

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

PROJECT
MB4

	FY 2005	FY 2006	FY 2007
PLAGUE VACCINE	8230	5591	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 5972 JVAP - Plague Vaccine - Initiated Phase 1 clinical trial of US candidate.
- 576 JVAP - Plague Vaccine - Continued non-clinical studies of US candidate.
- 576 JVAP - Plague Vaccine - Continued stability testing of US candidate.
- 906 JVAP - Plague Vaccine - Continued full-scale manufacturing process development of US candidate.
- 200 JVAP - Plague Vaccine - Submitted IND.

Total 8230

FY 2006 Planned Program:

- 511 JVAP - Plague Vaccine - Continue Phase 1 clinical trial of US candidate.
- 498 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate.
- 99 JVAP - Plague Vaccine - Continue stability testing of US candidate.
- 4283 JVAP - Plague Vaccine - Continue full-scale manufacturing process development of US candidate.

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

FY 2006 Planned Program (Cont):

- 200 JVAP - Plague Vaccine - Complete MS B and transition to SDD.

Total 5591

	FY 2005	FY 2006	FY 2007
VACCINE RICIN	0	5448	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 1012 JVAP - Ricin Vaccine - Initiate technology transfer from the technology base to advanced development. Transfer will consider several possible candidates, to include genetically modified variants.
- 1600 JVAP - Ricin Vaccine - Initiate assay development for vaccine candidate.
- 2836 JVAP - Ricin Vaccine - Initiate manufacturing process development for vaccine candidate.

Total 5448

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	219	0
RDT&E Articles (Quantity)	0	0	0

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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
MB4

FY 2006 Planned Program:

- 219 SBIR

Total 219

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JM0001 JOINT BIO AGENT IDENTIFICATION AND DIAGNOSTIC SYS (JBAIDS)	18372	20904	5732	14907	11328	8605	0	0	79848
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	80417	38409	39074	14451	42421	41808	31807	Cont	Cont
JX0210 CRITICAL REAGENTS PROGRAM (CRP)	1841	2192	2307	2385	2414	2625	2738	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	9843	60612	71834	92533	95113	77377	181423	Cont	Cont

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

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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
MB4

D. Acquisition Strategy:

JBAIDS II

JBAIDS is an evolutionary development program. Increment II will be a rapid development and fielding effort to deliver critical capability to identify toxins to the field in the shortest time. Increment II development effort focuses on militarizing and hardening of critical toxin identification technologies based on a commercial off-the-shelf (COTS)/Non-Developmental Item (NDI) candidate system. The four-phase down selection process includes a competitive fly-off of candidate toxin identification technologies in 4Q FY05, and source selection efforts in 2Q FY06.

VAC BOT

A prime systems contractor will function as the "responsible head" and license holder and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports development through FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. The other serotypes will be added as evolutionary upgrades when funding is available.

The management lead for the program shifts 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)

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MB4

During the System Development and Demonstration phase (SDD), the JVAP 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.

JVAP has developed a risk mitigation plan to carry both United Kingdom (UK) and US candidates through an event driven down-select decision point. The UK plague vaccine candidate is being developed through a Project Arrangement (PA) among the US, UK and Canada.

VAC ENC

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 initial development through FDA licensure.

The management lead for the program shifts 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 (Phase 1).

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

DATE
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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
MB4

During the System Development and Demonstration phase (SDD), the JVAP 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 ranging and scheduling.

VAC PLG

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 initial development through FDA licensure.

The management lead for the program shifts 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 (Phase 1).

During the System Development and Demonstration phase (SDD), the JVAP 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 period to provide additional safety data and determine dose and schedule of vaccinations and Phase 3 clinical trials are initiated.

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

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
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PE NUMBER AND TITLE
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
MB4

After a successful Milestone C, the program will enter the production and deployment phase. A low rate initial production decision (LRIP) will be held to authorize production of vaccine to support initial operational capability (IOC). The BLA will be submitted and FDA licensure (IOC) will be obtained during this phase. IOC is defined as FDA licensure plus 1/x Troop Equivalent Dose (TED) stockpile with x being the shelf life in years.

JVAP has developed a risk mitigation plan to carry both United Kingdom (UK) and US candidates through an event driven down-select decision point. The UK plague vaccine candidate is being developed through a Project Arrangement (PA) under provisions of the Chemical, Biological, Radiological Memorandum of Understanding among the US, UK and Canada.

VAC RICIN

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 transition into advanced development and FY06 non-clinical and process development activities. Chemical Biological Medical Systems (CBMS) will consider the possibility of requesting funding under the BioShield Act of 2004, or transitioning this product to the Department of Health and Human Services for development and procurement under the BioShield Act, when the product in question meets both National and DoD requirements.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio													
TT Bio - Infection Control Facility	SS/FP	TBS	C	0	0	NONE	2526	4Q FY06	0	NONE	0	2526	0
TT MED													
Biological Warfare Standoff Analysis	SS/FP	MIT Lincoln Labs, Lexington, MA	F	0	150	1Q FY06	0	NONE	0	NONE	0	150	0
VAC BOT													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	19891	3970	1Q FY05	661	1Q FY06	0	NONE	0	24522	0
VAC ENC													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	5218	0	NONE	2100	1Q FY06	0	NONE	0	7318	0
VAC PLG													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	18135	2469	1Q FY05	1869	1Q FY06	0	NONE	0	22473	0
VAC RICIN													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	1680	2Q FY06	0	NONE	0	1680	0
Subtotal I. Product Development:				43244	6589		8836		0		0	58669	

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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
MB4

I. Product Development - Cont.

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS II													
TD/D C - JBAIDS Inc II - Government Labs & Fly-Off Support	MIPR	Dugway Proving Ground, UT	U	0	759	3Q FY05	0	NONE	0	NONE	0	759	0
TD/D C - JBAIDS Inc II - LCCE and Fly-Off Support	C/CPFF	Tecolote, Falls Church, VA	C	0	107	3Q FY05	0	NONE	0	NONE	0	107	0
TD/D C - JBAIDS Inc II - Update ICE/IGE	MIPR	RDECOM, Edgewood, MD	U	0	33	3Q FY05	0	NONE	0	NONE	0	33	0
VAC BOT													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	4373	1278	1Q FY05	300	1Q FY06	0	NONE	0	5951	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC ENC													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	951	0	NONE	1050	1Q FY06	0	NONE	0	2001	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	4817	823	1Q FY05	849	1Q FY06	0	NONE	0	6489	0
VAC RICIN													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	840	2Q FY06	0	NONE	0	840	0
Subtotal II. Support Costs:				10141	3000		3039		0		0	16180	

Remarks:

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RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS II													
DTE C - JBAIDS Inc II - Fly-Off Efforts	C/FFP	Various	C	0	450	3Q FY05	0	NONE	0	NONE	0	450	0
DTE C - JBAIDS Inc II - Optimization and Testing of Assays, QA/QC, & Fly-Off Efforts	MIPR	Dugway Proving Ground, UT	U	0	131	3Q FY05	0	NONE	0	NONE	0	131	0
DTE C - JBAIDS II - Developmental Test and Site Support	MIPR	US Developmental Test Command, Aberdeen, MD	U	0	43	3Q FY05	0	NONE	0	NONE	0	43	0
DTE C - JBAIDS II - QA/QC Support, Test and Evaluation	MIPR	NAVSEA, Washington, DC	U	0	148	4Q FY05	0	NONE	0	NONE	0	148	0
VAC BOT													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	7917	3970	1Q FY05	671	1Q FY06	0	NONE	0	12558	0
VAC ENC													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2367	0	NONE	2695	1Q FY06	0	NONE	0	5062	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC PLG													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	7266	2450	1Q FY05	1895	1Q FY06	0	NONE	0	11611	0
VAC RICIN													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	2156	2Q FY06	0	NONE	0	2156	0
Subtotal III. Test and Evaluation:				17550	7192		7417		0		0	32159	

Remarks:

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS II													
PM/MS S - JBAIDS Inc II - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	149	3Q FY05	0	NONE	0	NONE	0	149	0
PM/MS S - JBAIDS II - Source Selection Support	MIPR	Various	U	0	680	4Q FY05	0	NONE	0	NONE	0	680	0
VAC BOT													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	621	487	4Q FY05	40	4Q FY06	0	NONE	0	1148	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	563	706	4Q FY05	60	4Q FY06	0	NONE	0	1329	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	130	244	1Q FY05	0	NONE	0	NONE	0	374	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	45	55	1Q FY05	0	NONE	0	NONE	0	100	0
PM/MS S - Award Fee (Maximum 10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2446	2591	1Q FY05	112	1Q FY06	0	NONE	0	5149	0

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
MB4

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Program Management	C/CPFF	American Institute of Biological Science, Reston, VA	N	0	34	1Q FY05	136	1Q FY06	0	NONE	0	170	0
VAC ENC													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	353	0	NONE	189	4Q FY06	0	NONE	0	542	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	259	0	NONE	126	4Q FY06	0	NONE	0	385	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	327	0	NONE	57	1Q FY06	0	NONE	0	384	0
PM/MS SB - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	37	0	NONE	31	1Q FY06	0	NONE	0	68	0
PM/MS S - Program Management	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	562	1Q FY06	0	NONE	0	562	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	630	247	4Q FY05	113	4Q FY06	0	NONE	0	990	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
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PROJECT
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	499	436	4Q FY05	170	4Q FY06	0	NONE	0	1105	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	83	151	1Q FY05	0	NONE	0	NONE	0	234	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	29	34	1Q FY05	0	NONE	0	NONE	0	63	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2300	1599	1Q FY05	327	1Q FY06	0	NONE	0	4226	0
PM/MS S - Program Management	C/CPFF	American Institute of Biological Science, Reston, VA	N	1282	21	1Q FY05	368	1Q FY06	0	NONE	0	1671	0
VAC RICIN													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	0	NONE	151	4Q FY06	0	NONE	0	151	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	0	NONE	101	4Q FY06	0	NONE	0	101	0

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Award Fee (Maximum 10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	336	1Q FY06	0	NONE	0	336	0
PM/MS S - Program Management	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	184	1Q FY06	0	NONE	0	184	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	219	NONE	0	NONE	0	219	0
Subtotal IV. Management Services:				9604	7434		3282		0		0	20320	
Remarks:													
TOTAL PROJECT COST:				80539	24215		22574		0		0	127328	

Exhibit R-4a, Schedule Profile

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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
MB4

D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JBAIDS II																																
JBAIDS Increment II - Advanced Concept Block II Technology "Fly-Off"								4Q																								
VAC BOT																																
Non-Clinical Testing	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3Q				
Manufacturing Process Development	>>	—	—	—	—	—	—	—	—	—	—	—	1Q																			
Investigational New Drug (IND) Application Submission			3Q																													
Phase 1 Clinical Trial (A/B)			3Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2Q										
Milestone B																	1Q															
VAC ENC																																
Investigational New Drug (IND) Application				4Q																												
Manufacturing Process Development						2Q	—		1Q																							
Phase 1 Clinical Trial								4Q	—	—	—	—	—	—	—	—	1Q															
VEE Milestone B															3Q																	
VAC PLG																																

Exhibit R-4a, Schedule Profile

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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
MB4

D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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)								
Process Development (Pilot Lot Scale)	>> 3Q							
Non-Clinical Studies	>>						4Q	
Current Good Manufacturing Practices (cGMP) Pilot Lot	1Q 4Q							
Manufacturing Process Development	4Q			3Q				
Investigational New Drug (IND) Application Submission		1Q						
Phase 1 Clinical Trial		2Q		1Q				
PLG Milestone B			2Q					
VAC RICIN								
Transition from Tech Base to Advanced Development		4Q	2Q					
Non-Clinical Testing			2Q 4Q					
Process Development			3Q 4Q					

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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

PROJECT
MC4

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MC4	MEDICAL CHEMICAL DEFENSE (ACD&P)	11402	21765	37663	15217	5028	5010	4880	Continuing	Continuing

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 Bioscavenger (pBSCAV) and Bioscavenger Increment II (BSCAV II), which will be used as a prophylaxis against nerve agents; (4) Vesicant antidotes (VES CM), which will be used to prevent and/or treat the devastating effects of vesicant CW agents (e.g., sulfur mustard); 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.

* Plasma Bioscavenger initiated in FY05. Data located under CA4, TT Bio.

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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
MC4

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
ADVANCED ANTICONVULSANT SYSTEM	0	2005	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 592 AAS - Complete non-Good Laboratory Practices (GLP) pre-clinical sand acute toxicology studies.
- 1097 AAS - Complete Phase 1 clinical safety study.
- 236 AAS - Complete and submit Investigational New Drug (IND) application.
- 80 AAS - Continue process development and current Good Manufacturing Practices (cGMP) requirements.

Total 2005

	FY 2005	FY 2006	FY 2007
BIOSCAVENGER	0	13628	28128
RDT&E Articles (Quantity)	0	0	0

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)

PROJECT
MC4

FY 2006 Planned Program:

- 4222 BSCAV II - Initiate small-scale manufacturing, process development, assay qualification, and test/evaluate medical defense products against traditional and non-traditional agents. Achieve MS A.
- 1421 BSCAV II - Initiate pre-clinical safety studies.
- 689 BSCAV II - Initiate IND application.
- 800 pBSCAV - Complete IND application.
- 4010 pBSCAV - Continue small-scale manufacturing, process development, and assay qualification.
- 500 pBSCAV - Initiate and complete pre-clinical safety studies.
- 1715 pBSCAV - Initiate Phase 1 clinical safety study.
- 271 Chemical Surety Facility - Continue test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility.

Total 13628

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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
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FY 2007 Planned Program:

- 1759 BSCAV II - Complete pre-clinical safety studies.
- 723 BSCAV II - Complete and submit IND application.
- 8419 BSCAV II - Continue small-scale manufacturing, process development, assay qualification, and test/evaluate medical defense products against traditional and non-traditional agents.
- 3121 BSCAV II - Initiate large-scale manufacturing, process development, and assay validation.
- 4378 BSCAV II - Initiate Phase 1 clinical safety study.
- 6747 pBSCAV - Complete small-scale manufacturing, process development, and assay qualification.
- 2105 pBSCAV - Complete Phase 1 clinical safety study.
- 605 pBSCAV - Transition product to Department of Health and Human Services (DHHS).
- 271 Chemical Surety Facility - Continue test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility.

Total 28128

	FY 2005	FY 2006	FY 2007
IMPROVED NERVE AGENT TREATMENT SYSTEM	0	5919	9535
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
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FY 2006 Planned Program:

- 460 INATS - Complete and submit IND application.
- 1445 INATS - Continue GLP pre-clinical safety studies.
- 2500 INATS - Continue Phase 1 clinical safety study.
- 1514 INATS - Continue process development and cGMP manufacturing requirements.

Total 5919

FY 2007 Planned Program:

- 1750 INATS - Complete GLP pre-clinical safety studies.
- 2133 INATS - Complete Phase 1 clinical safety study. Achieve Milestone B.
- 4230 INATS - Continue process development and cGMP manufacturing requirements.
- 1422 INATS - Initiate non-clinical studies (non-GLP Absorption, Distribution, Metabolism, and Excretion (ADME) range-finding animal studies).

Total 9535

	FY 2005	FY 2006	FY 2007
MEDICAL CHEMICAL DEFENSE	6665	0	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
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PROJECT
MC4

FY 2005 Accomplishments:

- 551 AAS - Continued non-GLP pre-clinical and acute toxicology studies.
- 717 AAS - Continued FDA IND/regulatory strategy to submit IND.
- 146 AAS - Initiated process development and cGMP requirements.
- 814 INATS - Continued GLP pre-clinical safety studies.
- 3906 INATS - Continued process development and cGMP requirements.
- 531 INATS - Initiated preparation of IND application.

Total 6665

	FY 2005	FY 2006	FY 2007
NTA MEDICAL COUNTERMEASURES	4737	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 368 AAS - Continued non-GLP pre-clinical and acute toxicology studies of anticonvulsant against non-traditional agents.
- 1049 AAS - Continued Phase 1 clinical safety study of anticonvulsant for treatment of non-traditional agent induced seizures.

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RDT&E DEFENSE-WIDE/
BA4 - Advanced Component Development and Prototypes (ACD&P)

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FY 2005 Accomplishments (Cont):

- 171 Chemical Surety Facility - Initiated test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility against non-traditional agents.
- 764 INATS - Continued non-GLP pre-clinical safety studies of oximes for treatment of non-traditional agent intoxication.
- 2385 INATS - Initiated Phase 1 clinical safety study of oximes for treatment of non-traditional agent intoxication.

Total 4737

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	213	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 213 SBIR

Total 213

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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PROJECT
MC4

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1350	5029	6417	38151	29405	14025	11702	Cont	Cont

D. Acquisition Strategy:

AAS

Medical Identification and Treatment Systems (MITS) 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 studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the systems 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.

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

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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
MC4

BSCAV

Bioscavenger is a developmental program with three distinct increments. Increment I is based on butyrylcholinesterase purified from human plasma, i.e., plasma-derived Bioscavenger or pBioscavenger. Medical Identification and Treatment Systems (MITS) 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 II will initially look at two different technologies that bind and sequester nerve agents. The down-selection to one of the two technologies will be made during the source selection process or following the Phase 1 clinical trial. Medical Identification and Treatment Systems (MITS) will exercise management oversight and a commercial partner(s) will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. If contracts are awarded for both technologies, there will be a down-selection to one Bioscavenger Increment II candidate at the Milestone B. After Milestone B, during the System Development and Demonstration Phase, MITS will continue to exercise management oversight and the commercial partner will serve as the systems 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.

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

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PE NUMBER AND TITLE
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INATS

Medical Identification and Treatment Systems (MITS) 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 studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the systems 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.

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

VES CM

Medical Identification and Treatment Systems (MITS) 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 studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the systems 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.

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* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - Process Development and cGMP Requirements	C/CPFF	Meridian Medical Technologies, Columbia, MD	C	0	0	NONE	80	3Q FY06	0	NONE	0	80	0
BSCAV													
BSCAV II - Pilot Lot & Small/Large Scale-Up Production	C/CPIF	TBS	C	0	0	NONE	1900	3Q FY06	8000	3Q FY07	0	9900	0
pBSCAV - Small Scale Manufacturing	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	0	NONE	2108	2Q FY06	6448	1Q FY07	0	8556	0
INATS													
INATS - Pilot Lot & Small Scale-Up Production	C/CPFF	Southwest Research Institute, San Antonio, TX	C	0	0	NONE	454	2Q FY06	2861	2Q FY07	0	3315	0
MEDCHEM													
AAS - Process Development and cGMP Requirements	C/CPFF	Meridian Medical Technologies, Columbia, MD	C	0	80	3Q FY05	0	NONE	0	NONE	0	80	0
INATS - Process Development and cGMP Requirements	C/CPFF	Southwest Research Institute, San Antonio, TX	C	0	2309	4Q FY05	0	NONE	0	NONE	0	2309	0
Subtotal I. Product Development:				0	2389		4542		17309		0	24240	

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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I. Product Development - Cont.

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - IND Application and Regulatory Support	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	0	NONE	167	2Q FY06	0	NONE	0	167	0
AAS - IND Application and Regulatory Support	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	138	2Q FY06	0	NONE	0	138	0
BSCAV													
BSCAV II - Regulatory Integration, IND, and NDA Support Efforts	C/CPIF	TBS	C	0	0	NONE	950	3Q FY06	1854	3Q FY07	0	2804	0
pBSCAV - Regulatory Integration, Quality Assurance, & IND Support Efforts	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	0	NONE	1054	2Q FY06	2250	3Q FY07	0	3304	0
INATS													
INATS - Regulatory Integration, IND, and NDA Support Efforts	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	400	2Q FY06	1430	2Q FY07	0	1830	0

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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INATS - Regulatory Integration, IND, and NDA Support Efforts	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	0	NONE	487	2Q FY06	0	NONE	0	487	0
MEDCHEM													
AAS - IND Application and Regulatory Support	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	268	445	3Q FY05	0	NONE	0	NONE	0	713	0
INATS - IND Application and Regulatory Support	MIPR	USAMMDA, Fort Detrick, MD	U	0	164	2Q FY05	0	NONE	0	NONE	0	164	0
AAS and INATS - IND Application and Regulatory Support	MIPR	USAMRICD, Edgewood, MD	U	374	95	2Q FY05	0	NONE	0	NONE	0	469	0
NTA MED													
INATS - IND/Regulatory Support for Phase 1 Clinical Safety Study	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	821	3Q FY05	0	NONE	0	NONE	0	821	0
Subtotal II. Support Costs:				642	1525		3196		5534		0	10897	

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

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BUDGET ACTIVITY
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BA4 - Advanced Component Development and Prototypes (ACD&P)

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - Phase 1 Clinical Safety Study	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	0	NONE	908	2Q FY06	0	NONE	0	908	0
AAS - Non-GLP Pre-Clinical & Acute Toxicology Studies	MIPR	USAMRICD, Edgewood, MD	U	0	0	NONE	407	2Q FY06	0	NONE	0	407	0
BSCAV													
BSCAV II - Test & Evaluation of Pre-Clinical, Animal Efficacy and Clinical Safety Studies	C/CPIF	TBS	C	0	0	NONE	2533	3Q FY06	4945	3Q FY07	0	7478	0
pBSCAV - Conduct Pre-Clinical Safety Studies	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	0	NONE	1601	1Q FY06	0	NONE	0	1601	0
pBSCAV - Conduct Phase 1 Clinical Safety Study	C/CPFF	DynPort Vaccine Company (DVC), Frederick, MD	C	0	0	NONE	1655	3Q FY06	2105	1Q FY07	0	3760	0
CSF - Test & Evaluation of Med Chem Products Under GLP Conditions	MIPR	USAMRAA, Fort Detrick, MD	U	0	0	NONE	271	2Q FY06	271	1Q FY07	0	542	0

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INATS													
INATS - Conduct Pre-Clinical, Non-Clinical and Clinical Studies	MIPR	USAMMDA, USAMRICD, CBIAC, Fort Detrick & Edgewood, MD	U	0	0	NONE	2009	2Q FY06	4308	2Q FY07	0	6317	0
INATS - Conduct Pre-Clinical and Dose Ranging Finding Studies	MIPR	USAMRICD, Edgewood, MD	U	0	0	NONE	1919	3Q FY06	0	NONE	0	1919	0
MEDCHEM													
AAS - Pre-clinical, Acute Toxicology, & Animal Efficacy Studies	MIPR	USAMRICD, Edgewood, MD	U	308	279	2Q FY05	0	NONE	0	NONE	0	587	0
INATS - Pre-Clinical and Acute Toxicology Studies	MIPR	USAMMDA, Fort Detrick, MD	U	607	542	2Q FY05	0	NONE	0	NONE	0	1149	0
NTA MED													
Chemical Surety Facility of Med Chem Products Under GLP Conditions	MIPR	USAMRAA, Fort Detrick, MD	U	0	171	3Q FY05	0	NONE	0	NONE	0	171	0
AAS and INATS - Phase I Clinical Safety Study	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	2716	1Q FY05	0	NONE	0	NONE	0	2716	0
AAS and INATS - Pre-Clinical Safety and Toxicology Studies	MIPR	USAMRICD, Edgewood, MD	U	0	1029	2Q FY05	0	NONE	0	NONE	0	1029	0

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal III. Test and Evaluation:				915	4737		11303		11629		0	28584	

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
PM/MS S - AAS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	159	1Q FY06	0	NONE	0	159	0
PM/MS S - AAS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	41	4Q FY06	0	NONE	0	41	0
PM/MS S - AAS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	105	4Q FY06	0	NONE	0	105	0
BSCAV													
PM/MS S - BSCAV - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	820	1Q FY06	825	1Q FY07	0	1645	0
PM/MS S - BSCAV - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	327	4Q FY06	572	4Q FY07	0	899	0
PM/MS S - BSCAV - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	409	4Q FY06	858	4Q FY07	0	1267	0

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BA4 - Advanced Component Development and Prototypes (ACD&P)

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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INATS													
PM/MS S - INATS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	310	1Q FY06	451	1Q FY07	0	761	0
PM/MS S - INATS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	120	4Q FY06	194	4Q FY07	0	314	0
PM/MS S - INATS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	220	4Q FY06	291	4Q FY07	0	511	0
MEDCHEM													
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	6	95	1Q FY05	0	NONE	0	NONE	0	101	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	18	372	1Q FY05	0	NONE	0	NONE	0	390	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	317	497	4Q FY05	0	NONE	0	NONE	0	814	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	417	1787	4Q FY05	0	NONE	0	NONE	0	2204	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	213	NONE	0	NONE	0	213	0
Subtotal IV. Management Services:				758	2751		2724		3191		0	9424	

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IV. Management Services - Cont.

Remarks:

TOTAL PROJECT COST:	2315	11402		21765		37663		0	73145	

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PROJECT
MC4

D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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	>>									2Q																						
AAS - Investigational New Drug (IND) Application			3Q							2Q																						
AAS - Phase 1 Clinical Safety Study			3Q									4Q																				
AAS - cGMP Manufacturing Requirements								4Q																							1Q	
AAS - Milestone B													1Q																			
BSCAV																																
BSCAV II - Milestone A										2Q																						
BSCAV II - Small Scale Manufacturing											3Q								4Q													
BSCAV II - Pre-Clinical Safety Studies												4Q			4Q																	
BSCAV II - IND Application												4Q			4Q																	
BSCAV II - Phase 1 Clinical Safety Study														3Q							1Q											
BSCAV II - Large Scale Manufacturing, Process Qualification & Validation															4Q																	4Q
BSCAV II - Milestone B																			4Q													

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D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
pBSCAV - Milestone A				4Q																												
pBSCAV - Small Scale Manufacturing, Process Dev, Assay Validation Efforts							3Q	—	—	—	—	—	1Q																			
pBSCAV - IND Application								4Q	—	—	3Q																					
pBSCAV - Pre-Clinical Safety Studies									1Q	—	3Q																					
pBSCAV - Phase 1 Clinical Safety Study											3Q	—	—	—	3Q																	
CSF - Maintain Chemical Surety Facility						2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
INATS																																
INATS - Milestone A			3Q																													
INATS - GLP Pre-Clinical Safety Studies				4Q	—	—	—	—	—	—	—	—	—	—	3Q																	
INATS - Process Development and cGMP Manufacturing Requirements				4Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2Q						
INATS - Phase 1 Clinical Safety Study							3Q	—	—	—	—	—	—	—	—	4Q																
INATS - IND Application								4Q	—	—	—	4Q																				
INATS - Non-Clinical Studies (Non-GLP ADME Range-Finding Animal Studies)														2Q	—	—	—	—	3Q													

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D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
INATS (Cont)								
INATS - Milestone B				4Q				
INATS - Phase 2 Clinical Safety Study (Comparative Bioavailability Study)					1Q	2Q		
INATS - GLP Animal Efficacy Studies					1Q		4Q	

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MR4

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MR4	MEDICAL RADIOLOGICAL DEFENSE	0	0	6996	15051	15188	11040	3919	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MR4 MEDICAL RADIOLOGICAL DEFENSE: The requirement for medical countermeasures against the effects of nuclear or radiological threats is supported in the Joint Requirements Office (JRO) baseline capability assessment for the Department of Defense (DoD) Nuclear, Biological and Chemical Defense. The Chemical Biological Radiological Nuclear (CBRN) agent therapeutic pharmaceuticals Initial Capabilities Document (ICD) covers a broad spectrum of medical countermeasures to include radiological medical prophylaxis and treatment that mitigates the consequences of nuclear or radiological attacks, thus fulfilling a critical need for force protection in this area. Medical Radiological Countermeasures supports the concept of improved joint force protection, allowing the joint force to operate safely, over the long term, and at near normal level of effectiveness while in a contaminated environment.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
MEDICAL RADIOLOGICAL COUNTERMEASURES	0	0	6996
RDT&E Articles (Quantity)	0	0	0

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MR4

FY 2007 Planned Program:

- 3697 MRADC - Initiate process development and current Good Manufacturing Practices (cGMP) small-scale manufacturing. Achieve Milestone (MS) A.
- 2250 MRADC - Initiate pre-clinical safety and toxicology studies.
- 649 MRADC - Initiate Investigational New Drug (IND) application.
- 400 MRADC - Initiate protocol approval to begin Phase I clinical safety study.

Total 6996

C. Other Program Funding Summary:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JN0789 MULTI-SERVICE RADIACS (MSR)	5800	8293	8547	11097	11017	0	0	0	44754

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D. Acquisition Strategy:

MRADC

Medical Identification and Treatment Systems (MITS) and/or commercial partner will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent), will serve as the systems integrator to ensure that products are manufactured in accordance with Food and Drug Administration (FDA) regulations and guidelines, that appropriate Phase 2 human clinical safety and definitive animal efficacy studies are conducted, and that 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. Medical Radiation Countermeasures will be developed using a systems level approach to address multiple organ system effects of radiation exposure. Individual countermeasure solutions will be developed using a single step to full capability (FDA licensure).

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PROJECT
MR4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Pilot Lot & Small Scale Production	C/CPFF	TBS	C	0	0	NONE	0	NONE	2760	2Q FY07	0	2760	0
Subtotal I. Product Development:				0	0		0		2760		0	2760	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Regulatory Integration Support Efforts	C/CPFF	TBS	C	0	0	NONE	0	NONE	1049	2Q FY07	0	1049	0
Subtotal II. Support Costs:				0	0		0		1049		0	1049	

Remarks:

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
MRADC - Pre-clinical, Safety and Toxicology Studies	C/CPFF	TBS	C	0	0	NONE	0	NONE	2678	2Q FY07	0	2678	0
Subtotal III. Test and Evaluation:				0	0		0		2678		0	2678	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MRADC													
PM/MS S - MRADC - Chem Bio Medical Systems	Allot	CBMS, Fort Detrick, MD	U	0	0	NONE	0	NONE	210	4Q FY07	0	210	0
PM/MS S - MRADC - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	0	NONE	140	4Q FY07	0	140	0
PM/MS S - MRADC - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	0	NONE	159	1Q FY07	0	159	0
Subtotal IV. Management Services:				0	0		0		509		0	509	

Remarks:

TOTAL PROJECT COST:	0	0		0		6996		0	6996	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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													1Q																			
MRADC - Process Development and cGMP Small-Scale Manufacturing														2Q					3Q													
MRADC - Pre-Clinical Safety and Toxicology Studies														2Q				2Q														
MRADC - IND Application																4Q		2Q														
MRADC - Phase 1 Clinical Safety Study																				4Q				4Q								
MRADC - Milestone B																								4Q								
MRADC - Phase 2 Clinical Safety Study																									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 2006

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	138278	260279	212072	287074	238203	188868	237579	Continuing	Continuing
CA5	CONTAMINATION AVOIDANCE (SDD)	63966	83605	64689	99817	58425	53039	13990	Continuing	Continuing
CM5	HOMELAND DEFENSE (SDD)	8754	390	0	0	0	0	0	0	9144
CO5	COLLECTIVE PROTECTION (SDD)	2460	662	12581	21450	28306	20466	18826	Continuing	Continuing
DE5	DECONTAMINATION SYSTEMS (SDD)	4169	16496	11050	5397	15053	15353	7365	Continuing	Continuing
IP5	INDIVIDUAL PROTECTION (SDD)	27852	19724	19663	12441	3089	3071	999	Continuing	Continuing
IS5	INFORMATION SYSTEMS (SDD)	19884	73761	25838	17285	8812	5537	3274	Continuing	Continuing
MB5	MEDICAL BIOLOGICAL DEFENSE (SDD)	9843	60612	71834	92533	95113	77377	181423	Continuing	Continuing
MC5	MEDICAL CHEMICAL DEFENSE (SDD)	1350	5029	6417	38151	29405	14025	11702	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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

DoD Biological Defense mission requires the detection of validated biological threat agents to provide early warning capabilities on mobile and fixed platforms. This program element will provide theater protection through the development of point and stand-off detection systems. The detection system concept will provide detection, identification, warning, and sample collection for verification that a biological agent attack has occurred. This program element also provides for the development of biological defense medical programs. DoD Biological Defense medical mission will address: (1) protective vaccines - vaccination capability against the most probable biological threat agents; (2) identification - clinical identification of biological threat agents through medical evaluation and laboratory analysis to augment early warning capabilities.

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 2006

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 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		145794	280908	228319
Current Biennial Budget Estimate (FY 2007)		138278	260279	212072
Total Adjustments		-7516	-20629	-16247
a. Congressional General Reductions		-114	-3804	0
b. Congressional Increases		0	-16825	0
c. Reprogrammings		-6208	0	0
d. SBIR/STTR Transfer		-1194	0	0
e. Other Adjustments		0	-32	-16247

Change Summary Explanation:

Funding: N/A

Schedule: N/A

Technical: N/A

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CA5	CONTAMINATION AVOIDANCE (SDD)	63966	83605	64689	99817	58425	53039	13990	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) Interim Biological Agent Detection System (IBADS), (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 Light Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), (7) Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), (8) Joint Warning and Reporting Network (JWARN), and the (9) Point Chemical Agent Detector Evaluation (PCADE) Program.

This project includes IBADS continued technical support. IBADS gives the Navy an interim point detection capability aboard ships at sea, which will be part of the theater protection strategy. The JBPDS will replace the IBADS beginning in FY05.

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

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The Joint Biological Point Detection System (JBPDS) is the only 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. Director, Operational Test and Evaluation has mandated Whole System Live Agent Test prior to FRP.

The JBPDS Block II program uses spiral development with an evolutionary component/suite upgrade acquisition approach, to take advantage of emerging technologies and to provide the Services with enhanced detection performance at lower life cycle costs. Per Director, Operational Test and Evaluation (DOT&E) Memorandum dated July 9, 2002, the JBPDS Block II program funding will support the development of a Whole System Live Agent Test (WSLAT) capability. DOT&E has directed the JBPDS program undergo WSLAT prior to a program Full Rate Production (FRP) decision. The JBPDS Block II funding will support WSLAT methodology, chamber design, system purchase and JBPDS record test execution.

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

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The Joint Biological Standoff Detection System (JBSDS) is the first standoff early warning biological detection (BD) system. The system will be capable of providing near real time detection of biological attacks/incidents and standoff early warning detection/warning of biological warfare (BW) agents at fixed sites or when mounted on multiple platforms, including NBC reconnaissance platforms. It will be capable of providing standoff detection, ranging, tracking, discrimination (manmade vs. natural occurring aerosol) and generic detection (bio vs. non-bio) of large area 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. Increment I will provide an initial capability to Army and Air Force units and will be deployed at fixed site locations or will operate in a stationary mode on mobile platforms. Increment II will be used by all services and will provide increased sensitivity, on-the-move operation, and an interface with existing and planned communication networks (i.e. JWARN). Increment II can be employed in support of various areas (e.g., fixed sites, APODs/SPODs, amphibious landing sites, etc., or on platforms (ships, aircraft or ground vehicles).

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.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The JCBRAWM program employs an incremental acquisition strategy to develop full capability to monitor dangerous materials in water. The JCBRAWM Increment I will provide first real-time biological detection capability in source water (lakes, sea water, rivers, and product waters from water treatment systems. Increment II will provide increased detection/monitoring capabilities for chemicals in water. Increment III will provide radiological detection capability in water. Increment IV will provide non-reagent biological detection in water (reagent based detection requires temperature controlled conditions).

The JSLNBCRS is a lightweight NBC detection and identification system. It will consist of a Base Vehicle (BV) equipped with hand-held, portable and mounted, current, and advanced NBC detection and identification equipment. The JSLNBCRS 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 JSLNBCRS: 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, toxic industrial chemical, and biological weapon detection and identification as a component of the JSLNBCRS and Stryker NBCRV systems.

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. JSLSCAD has detection capability of up to five kilometers. The JSLSCAD will replace the M21 Remote Stand-off Chemical Agent Alarm (RSCAAL). The JSLSCAD program will utilize an incremental acquisition approach. Increment I will provide an initial capability and be used for ground mobile reconnaissance applications. Increment II will pursue an evaluation of three commercially available systems with follow-on low-rate production. Increment III will assess the potential for integrating detection capabilities in aerial platforms.

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

DATE
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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

The JWARN will provide standard integration and analysis of NBC detection information with Command, Control, Communication, Computers, Intelligence Surveillance and Reconnaissance (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 battlespace 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. Preplanned Product Improvement (P3I) will investigate new detectors/sensors and software changes to Service C4I systems. This program has been transitioned to IS5 beginning in FY05.

The PCADE program evaluated emerging technologies for potential insertion into future point chemical agent detection systems.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
INTERIM BIO AGENT DETECTOR SYS (IBADS)	283	0	0
RDT&E Articles (Quantity)	0	0	0

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

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

FY 2005 Accomplishments:

- 283 IBADS - Completed the decommissioning of the remaining nine (9) shipboard IBADS.

Total 283

	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	8800	7283	2180
RDT&E Articles (Quantity)	5	0	0

FY 2005 Accomplishments:

- 2810 JBPDS - Purchased JBPDS test hardware, Man-Portable, XM 96 systems (five @ $503K ea.) and one System Support Package ($295K) for Whole System Live Agent Test (WSLAT) support.
- 3000 JBPDS - Initiated improvements for the JBPDS LRUs to meet objective requirement for multiple agents and sensitivity.
- 2550 JBPDS - Initiated effort to adapt the Array Biological Sensor as an upgrade to the JBPDS.
- 440 JBPDS - Provided systems engineering support.

Total 8800

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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 Planned Program:

- 1030 JBPDS - Validate LRU improvements.
- 1000 JBPDS (T&E Infrastructure/WSLAT) - Procure Whole System Live Agent Test (WSLAT) consumables.
- 1010 JBPDS (T&E Infrastructure/WSLAT) - Complete M&S development of JBPDS engineering model in support of WSLAT effort.
- 1732 JBPDS (T&E Infrastructure/WSLAT) - Complete methodology development and testing for WSLAT.
- 700 JBPDS (T&E Infrastructure/WSLAT) - Complete preliminary chamber design contract.
- 575 JBPDS (T&E Infrastructure/WSLAT) - Provide program management and technical support for WSLAT.
- 245 JBPDS - Complete contractor support for optimization and engineering support.
- 991 JBPDS - Congressional Interest Item - Biological and Chemical Agents Detector.

Total 7283

FY 2007 Planned Program:

- 1017 JBPDS (T&E Capability/WSLAT) - Conduct WSLAT record test in support of JBPDS.
- 1163 JBPDS - Provide system engineering support.

Total 2180

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	17655	0	2000
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3546 JBSDS - Continued development contract (including contractor support of Production Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E)).
- 450 JBSDS - Provided systems engineering support.
- 4147 JBSDS - Conducted and completed PVT.
- 5041 JBSDS - Initiated Multi-Service Operational Test and Evaluation (MOT&E).
- 900 JBSDS - Initiated Modeling and Simulation for JBSDS Increment II.
- 3571 JBSDS - Initiated demonstration of Increment II technologies.

Total 17655

FY 2007 Planned Program:

- 2000 JBSDS (T&E Capability) - Develop real-time Man-In-Simulant Test (MIST) sampling system.

Total 2000

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM INCREMENT II	0	19560	19890
RDT&E Articles (Quantity)	0	0	18

FY 2006 Planned Program:

- 5181 JBSDS - Conduct Multi-Service Operational Test & Evaluation (MOT&E).
- 4980 JBSDS - Complete Developmental contract (including contractor support for MOT&E).
- 972 JBSDS - Continue agent/simulant correlation.
- 2335 JBSDS - Complete Inc I Developmental Testing.
- 1183 JBSDS Increment II - Continue Increment II Modeling & Simulation.
- 1696 JBSDS Increment II - Initiate Increment II Florescence/Algorithm Improvement Study.
- 909 JBSDS Increment II - Initiate design and development of engineering prototypes.
- 1276 JBSDS Increment II - Plan and initiate Increment II testing/field demo.
- 1028 JBSDS Increment II - Design/Build Spectral Characterization Instrument

Total 19560

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

FY 2007 Planned Program:

- 1314 JBSDS Increment II - Field test to support prototype/algorithm development.
- 2500 JBSDS Increment II - Complete Increment I MOT&E Evaluation and prepare for FRP Decision.
- 3370 JBSDS Increment II - Complete Increment I/II Algorithm Study.
- 1737 JBSDS Increment II - Continue agent/simulant correlation.
- 1737 JBSDS Increment II - Initiate field simulant challenge test and cloud characterization.
- 1737 JBSDS Increment II - Initiate additional test grid development.
- 1737 JBSDS Increment II - (T&E Capability) - Prepare turnkey packages of required NEPA documentation for expanded range capabilities, to allow for rapid and standing environmental approvals.
- 4020 JBSDS Increment II - Implement and test Increment I algorithm upgrade.
- 1738 JBSDS Increment II - Initiate chemical biological standoff chamber test capability.

Total 19890

	FY 2005	FY 2006	FY 2007
JOINT CHEMICAL AGENT DETECTOR (JCAD)	0	16842	3500
RDT&E Articles (Quantity)	0	120	0

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

FY 2006 Planned Program:

- 2345 JCAD - Provide contract support of commercial test systems.
- 8340 JCAD - Conduct government evaluation of commercial detector. Efforts include completing PQT and performing operational assessment.
- 1757 JCAD - Provide systems engineering support.
- 2200 JCAD - Purchase Increment 2 systems and support (120 systems at $13.5K each).
- 2200 JCAD - (T&E Capability) - Design agent simulant dissemination systems, sampling systems, monitoring systems, and establish testing, safety and security protocols.

Total 16842

FY 2007 Planned Program:

- 1500 JCAD - Initiate government evaluation of Increment 2 detector.
- 2000 JCAD - Conduct Increment 1 MOT&E.

Total 3500

	FY 2005	FY 2006	FY 2007
JS CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENT WATER MONITOR	0	0	7600
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

FY 2007 Planned Program:

- 6930 JCBRAWM - Initiate test and evaluation efforts to include developing test methodology and purchasing test instrumentation.
- 670 JCBRAWM - Initiate government systems engineering support.

Total 7600

	FY 2005	FY 2006	FY 2007
JS LIGHT NBC RECON SYS (JSLNBCRS)	15190	9358	1770
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 6758 JSLNBCRS - Continued TICs and TIMs software upgrades for CBMS II transition to JSLNBCRS procurement. Continued improvements to biological detection/identification capability. Initiated Integrated Logistics Support (ILS) of Chemical Biological Mass Spectrometer (CBMS) II.
- 2600 JSLNBCRS - Continued Multi-service Operational Test & Evaluation (MOT&E) planning and preparation.
- 1756 JSLNBCRS - Completed LAV integration and conducted contractor Engineering Design Test (EDT) and Production Qualification Test (PQT).
- 2632 JSLNBCRS - Initiated, conducted and completed First Article Test (FAT)/Production Verification Test (PVT) of HMMWV LRIP.

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

FY 2005 Accomplishments (Cont):

- 1444 JSLNBCRS - Provided government systems engineering support.

Total 15190

FY 2006 Planned Program:

- 3000 JSLNBCRS - Initiate, conduct and complete MOT&E.
- 2386 JSLNBCRS - Complete development and validation of biological detection capability for Chemical Biological Mass Spectrometer (CBMS) II.
- 2120 JSLNBCRS - Initiate additional chemical/Toxic Industrial Chemical (TIC) library for CBMS II.
- 1210 JSLNBCRS - Complete CBMS II software technical transfer and Integrated Logistics Support (ILS).
- 642 JSLNBCRS - Provide government systems engineering support for CBMS II.

Total 9358

FY 2007 Planned Program:

- 1770 JSLNBCRS - Initiate the development, integration and test of the Chemical Unmanned Ground Reconnaissance (CUGR) vehicle and P3I Advanced Concept Technology Development (ACTD) programs into JSLNBCRS.

Total 1770

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

	FY 2005	FY 2006	FY 2007
JS LIGHTWEIGHT STANDOFF CHEMICAL AGENT DET (JSLSCAD)	18046	26805	27749
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 2000 JSLSCAD - Continued Increment I evaluation to support NRC findings (modeling & simulation) and initiated Increment II evaluation efforts.
- 1500 JSLSCAD - Initiated and completed Algorithm Improvement Program Testing.
- 1500 JSLSCAD - Supported remote sensing test facility design and development of methodology for testing of commercial detectors.
- 1000 JSLSCAD - Procured data collection instrumentation.
- 800 JSLSCAD - Initiated systems engineering requirements analysis and Field of Regard Study.
- 700 JSLSCAD - Conducted field test methodology prove-out.
- 200 JSLSCAD - Integrated commercial systems into platforms.
- 9259 JSLSCAD - Initiated evaluation of candidate commercial remote detection systems (Increment II).
- 1087 JSLSCAD - Continued to provide government systems engineering support.

Total 18046

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DATE
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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
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FY 2006 Planned Program:

- 1900 JSLSCAD - Conduct IOT&E of systems supporting NBCRS platforms (Increment I).
- 6200 JSLSCAD - Initiate product improvement program for system hardware and detection software.
- 3840 JSLSCAD - (T&E Capability) Conduct limited objective experiment to measure performance improvement relative to developing requirements.
- 4100 JSLSCAD - Continue Increment I model analysis and development of improved techniques to support testing and analysis to support NRC findings and refine modeling techniques.
- 3536 JSLSCAD - Integrate improved algorithm into system hardware.
- 1129 JSLSCAD - Continue to provide government systems engineering support.
- 4500 JSLSCAD - (T&E Capability) Initiate data gathering efforts from various battle-space representative environments to include correlating and archiving spectral background signatures from these environments.
- 700 JSLSCAD - (T&E Capability) Coordinate/facilitate subject matter expert support.
- 900 JSLSCAD - (T&E Capability) Initiate purchase of data collection instrumentation.

Total 26805

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BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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FY 2007 Planned Program:

- 7181 JSLSCAD - Continue product improvement program for system hardware and detection software.
- 4500 JSLSCAD - Complete modeling and simulation verification efforts to support NRC findings.
- 1700 JSLSCAD - Conduct MOT&E and validate Joint Service Interoperability.
- 6100 JSLSCAD - Initiate formal testing of product improvement program.
- 4682 JSLSCAD - Initiate development evaluation of Increment III systems.
- 1586 JSLSCAD - Continue to provide government systems engineering support.
- 2000 JSLSCAD - (T&E Capability) Continue background signature data gathering efforts to include adding CB spectral signatures and correlating field and chamber test data.

Total 27749

	FY 2005	FY 2006	FY 2007
POINT CHEMICAL AGENT DETECTOR EVALUATION	3992	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3492 PCADE - Initiated and completed government evaluation of candidate technologies.
- 500 PCADE - Initiated and completed systems engineering support.

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FY 2005 Accomplishments (Cont):
Total 3992

	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	2947	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 2947 TT Bio - Congressional Interest Item - Enhancements to provide for the modernization and upgrade of sensors and detection devices.

Total 2947

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	810	0
RDT&E Articles (Quantity)	0	0	0

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FY 2006 Planned Program:

- 810 SBIR

Total 810

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	2070	9949	7035	7016	7207	7206	6978	Cont	Cont
JC0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	134532	111757	105769	106619	104249	127947	125221	Cont	Cont
JC0101 CHEM/BIO AGENT WATER MONITOR	0	0	0	838	2078	2259	6591	Cont	Cont
JC0250 JOINT BIO STANDOFF DETECTOR SYSTEM (JBSDS)	1917	16482	0	0	0	0	10161	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	10257	14781	10267	7671	0	0	0	0	42976
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	22681	26510	30407	32267	39546	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	55548	26910	7869	12995	12961	13035	0	0	129318

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C. Other Program Funding Summary (Cont):

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MC0100 JT SVC LIGHT NBC RECON SYS (JSLNBCRS)	44799	46647	52806	56432	57245	94563	110103	Cont	Cont
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	2718	17513	19579	30107	29519	38038	32823	Cont	Cont

D. Acquisition Strategy:

IBADS — Technical support of 13 fielded systems. It is the goal of the Navy to decommission all 13 shipboard IBADS during FY04 and FY05 because of the expected fielding of JBPDS.

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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. Through 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). Upgraded LRUs that demonstrate improved system performance, availability, and lower ownership cost, will be supplied to field units throughout the LRIP phase, until new Full Rate Production (FRP) systems or LRUs are developed that meet the objective requirements. 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.

JBSDS II

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. The Increment II 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.

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JBTDS

The JBTDS will use an evolutionary development strategy to expedite fielding of a system to meet the threshold requirements and then be upgraded at intervals until the objective requirements can be met and implemented at the appropriate time. Pre-milestone activities to reach Milestone A have been initiated in FY05. Concurrently, tech base activities are being monitored to leverage and/or accelerate critical detection technologies.

JCAD

Joint Chemical Agent Detector (JCAD) acquisition strategy focused Joint Service science and technology efforts into development of a small lightweight chemical agent detector. During production qualification test (PQT) in 2003, issues were identified in meeting two key performance parameters. Testing was terminated and the development contract allowed to expire. The acquisition strategy has been restructured to meet the JCAD requirements. A new 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.

JCBRAWM

Increment I: Conducted technology down-select in Feb 04 with formal Decision Analysis Process and Panel. Recommended for early transition of biodetection tickets for the interim capability. The concept of this detector will be handheld multiplex assay tickets with a reader.

Increment II: This increment identifies a technology for detecting/monitoring Chemical Warfare Agents (CW agents) in water. Milestone A is planned for FY08.

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Increment III: This increment develops a detector/monitor for identifying radiological agents in water. Milestone A is planned for FY08.

Increment IV: This increment develops a technology to replace Increment I with a non-reagent biological detector/monitor in water.

JSLNBCRS

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 will be tested concurrently with LRIP HMMWVs. 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.

JSLSCAD

The JSLSCAD program restructure reflects an incremental acquisition strategy to provide an initial capability by evaluating the current JSLSCAD configuration and alternative commercial systems against JSLSCAD Joint Operational Requirements Document (JORD) requirements.

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Increment I - Initial Capability: This Increment is the "current" JSLSCAD configuration developed under the Engineering and Manufacturing Development (EMD) contract awarded in 1997 after a full and open competition. While this system did not meet all the Key Performance Parameters (KPPs) or critical operational requirements of the JORD, the Acquisition and Combatant communities determined that the Increment I system provided additional capabilities to the warfighter (on-the-move detection) that the currently fielded M21 Remote Standoff Chemical Agent Alarm (RSCAAL) is not capable of performing. Increment I systems will be used for ground mobile reconnaissance applications on the Stryker Nuclear, Biological and Chemical Reconnaissance Variant (NBCRV) and the Joint Service Light NBC Reconnaissance System (JSLNBCRS). Upon Milestone Decision Authority (MDA) approval of the JSLSCAD Full Rate Production (FRP) decision, the government will award a Firm Fixed Price (FFP) production contract to the EMD contractor for production of additional systems to fulfill the remaining Styrker NBCRV and JSLNBCRS requirements. As of 17 November 2005, seventy-one (71) Increment 1 systems are required to support the reconnaissance programs. In June 2004, the JSLSCAD program office awarded a FFP contract to the EMD contractor to refurbish 31 of the Production Qualification Test/Initial Operational Test and Evaluation (PQT/IOT&E) systems from the EMD contract. These thirty-one (31) Low Rate Initial Production (LRIP/IOT&E) Increment 1 JSLSCADs are being provided to support the Stryker NBCRV IOT&E, the JSLNBCRS IOT&E and the Stryker NBCRV fielding. Forty (40) additional systems will complete the production. A production contract is contemplated to be awarded to the EMD contractor on a non-competitive basis to produce the remaining Increment 1 requirements. The appropriate Justification and Approval (J&A) will be executed to support this contract. A cost reimbursable contract will also be awarded to the EMD contractor for Contractor Logistics Support (CLS) of the fielded systems. No further contracting actions are expected for Increment I.

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Increment II Commercial Item - Ground/Ship/Fixed-Site: Increment II has pursued an evaluation of three commercially available systems from three contractors who responded favorably to a market survey. The contracting officer determined Increment II to be a commercial item as defined by Federal Acquisition Regulation (FAR) 2.101. Based upon this determination, a market survey was conducted to obtain product information for specific items which would meet the government's requirements. Potential offerors were provided the opportunity to submit product information based on notices published on three separate websites. The product information which was received through the market survey was evaluated and contracts were awarded to three vendors. The Government will evaluate the commercial systems with the potential to meet the JSLSCAD KPPs for ground, mobile, fixed site, and shipboard applications. An Algorithm Improvement Program (AIP) will be considered for shipboard applications to address the shipboard operating environments. The Government anticipates one or more contractors will be awarded a LRIP contract as a result of a successful evaluation. The LRIP and follow-on FRP contracts for Increment II will be awarded based on the results of the Increment 2 Government Evaluation and additional market research. If the LRIP and follow-on FRP contracts are awarded on a non-competitive basis, the appropriate J&A approvals will be obtained to support these contracts; otherwise full and open competitive procedures will be used.

Increment III Commercial Item - Aerial: After the Increment II Government evaluation, the Government will assess the potential for developing the contractor's item to meet the Increment III aerial requirements. If the Increment II system does not have the potential to meet the Increment III KPPs, the Government will conduct another market survey to determine if there is a commercial technology with the capability to meet the Increment III requirements.

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PCADE

PCADE is a limited technology demonstration program that investigated emerging technologies for potential insertion into future point chemical agent detection programs.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
SW SB - Identification Component Upgrades	MIPR	Various	C	709	1400	2Q FY05	0	NONE	0	NONE	0	2109	0
SW SB - JBPDS Test Hardware (WSLAT)	C/CPFF	General Dynamics, Armaments & Technical Products, Charlotte, NC	C	0	2810	2Q FY05	0	NONE	0	NONE	0	2810	0
HW S - Sensor Design	PO	MIT-LL, Boston, MA	F	0	1600	2Q FY05	600	1Q FY06	0	NONE	0	2200	0
HW S - Identification upgrades	SS/CPFF	Constellation Technology, Largo, FL	F	0	2550	4Q FY05	0	NONE	0	NONE	0	2550	0
HW C - Biological and Chemical Agents Detector	PO	TBS	F	0	0	NONE	991	4Q FY06	0	NONE	0	991	0
JBSDS													
SW S - Develop and Integrate JBSDS, Initiate LRIP, Develop ILS and Documentation	C/CPFF	Science & Engineering Services, Inc, Columbia, MD	C	6755	3208	1Q FY05	0	NONE	0	NONE	0	9963	0
SW SB - Initiate Demonstration of Increment II technologies	MIPR	Various	C	0	1800	2Q FY05	0	NONE	0	NONE	0	1800	0
JBSDS II													
SW SB - Design and develop Inc II prototypes	MIPR	Sandia National Lab, Albuquerque, NM	C	0	0	NONE	525	1Q FY06	0	NONE	0	525	0
SW SB - Develop and integrate JBSDS Inc I	C/CPFF	SESI, Columbia, MD	C	0	0	NONE	4447	1Q FY06	0	NONE	0	4447	0

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PE NUMBER AND TITLE
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SW SB - Algorithm Development	MIPR	NAVSEA, Johns Hopkins University, Baltimore, MD, MIT, Boston, MA	F	0	0	NONE	1313	1Q FY06	1830	1Q FY07	0	3143	0
SW SB - Algorithm Upgrade Testing	C/CPFF	SESI, Columbia, MD	C	0	0	NONE	0	NONE	1330	1Q FY07	0	1330	0
JCAD													
SW SB - Purchase Commercial Detectors	C/FFP	TBS	C	1200	0	NONE	2200	3Q FY06	0	NONE	0	3400	0
JSLNBCRS													
SW S - Toxic Industrial Chemicals/Toxic Industrial Materials and Biological Detection Software Improvement for CBMS	MIPR	Oak Ridge National Laboratory, Oak Ridge, TN	U	7800	6758	2Q FY05	6591	2Q FY06	0	NONE	0	21149	0
HW C - Development and Integration of CUGR & P3I ACTD programs	C/CPFF	TBS	C	0	0	NONE	0	NONE	1500	2Q FY07	0	1500	0
HW S - LAV Integration and EDT/PQT Support	MIPR	PM LAV, TACOM, Warren, MI	U	0	118	1Q FY05	0	NONE	0	NONE	0	118	0
JSLSCAD													
SW S - Develop Software	C/CPFF	General Dynamics-ATP, Charlotte, NC	C	14975	250	2Q FY05	0	NONE	0	NONE	0	15225	11095
SW S - Develop Software	C/CPFF	TBS	C	0	0	NONE	1000	2Q FY06	500	1Q FY07	0	1500	0

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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SW S - Design and Build Test Hardware	C/CPFF	General Dynamics-ATP, Charlotte, NC	C	37500	250	2Q FY05	0	NONE	0	NONE	0	37750	0
SW S - Design and Build Test Hardware	C/CPFF	TBS	C	0	0	NONE	4000	2Q FY06	6681	1Q FY07	0	10681	0
SW S - Develop and Manage Test Methodology	PO	Various	U	1000	1500	1Q FY05	500	2Q FY06	1800	1Q FY07	0	4800	0
HW S - Purchase Data Collection Instrumentation	Reqn	NAVSEA/JHU APL, Baltimore, MD	C	0	1000	2Q FY05	900	2Q FY06	0	NONE	0	1900	0
SW S - Develop and Manage Algorithm Improvement Program	Reqn	Various	C	0	1500	3Q FY05	3536	2Q FY06	0	NONE	0	5036	0
SW S - Model Development and Analysis	C/CPIF	ITT Industries, Alexandria, VA	C	0	0	NONE	900	2Q FY06	900	1Q FY07	0	1800	0
TT Bio													
TT Bio - Contamination Avoidance - upgrade sensors and detection devices	SS/FP	TBS	C	0	0	NONE	2947	4Q FY06	0	NONE	0	2947	0
Subtotal I. Product Development:				69939	24744		30450		14541		0	139674	

Remarks: JBPDS - FY05 - Purchase five XM96 systems at $503k/ea and one system support package at $295k.

JCAD - FY06 - 120 systems at $13.5K per system

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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IBADS													
TD/D SB - Continued technical support of fielded IBAD systems, and decommission of IBADS.	MIPR	NSWC, Dahlgren, VA	U	263	283	1Q FY05	0	NONE	0	NONE	0	546	0
JBPDS													
ES S - Support for optimization and engineering manufacturing	C/CPFF	GD, ATP, Charlotte, NC	U	0	0	NONE	245	2Q FY06	0	NONE	0	245	0
JBSDS													
TD/D SB - Modeling and Simulation	PO	FT Detrick, MD and BSM Inc., Kennett Square, PA	C	200	240	1Q FY05	0	NONE	0	NONE	0	440	0
TD/D S - Modeling and Test Support	MIPR	NAVSEA/Johns Hopkins University, Baltimore, MD	F	600	3025	1Q FY05	0	NONE	0	NONE	0	3625	0
ES S - Modeling & Simulation, CAIV	MIPR	Various	F	0	75	1Q FY05	0	NONE	0	NONE	0	75	0
ILS S - Training, ILS Support	MIPR	Various	U	0	591	2Q FY05	0	NONE	0	NONE	0	591	0
JBSDS II													
ES S - Modeling & Simulation, test support	PO	BSM, Inc, Kennett Square, PA	C	0	0	NONE	357	1Q FY06	309	1Q FY07	0	666	0
ES S - Modeling & Simulation, test support	PO	NAVSEA, Johns Hopkins-APL, Columbia, MD	C	0	0	NONE	1839	1Q FY06	2000	1Q FY07	0	3839	0

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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCAD													
ILS S - Technical Data and Logistics Support	MIPR	Various	U	2558	0	NONE	2386	2Q FY06	0	NONE	0	4944	0
ES S - Contractor Support - Technical Evaluation	Reqn	TBS	C	0	0	NONE	2345	2Q FY06	0	NONE	0	2345	0
ES S - Evaluate commercial detectors	MIPR	Various	U	0	0	NONE	1415	2Q FY06	0	NONE	0	1415	0
JCBRAWM													
ILS S - Logistics Support	MIPR	RDECOM, APG, MD	U	0	0	NONE	0	NONE	150	1Q FY07	0	150	0
TD/D S - Technical Data Documentation	MIPR	RDECOM, APG, MD	U	0	0	NONE	0	NONE	100	1Q FY07	0	100	0
JSLNBCRS													
ILS C - CBMS Block II ILS Support	MIPR	JPM NBC CA, APG, MD	U	40	40	1Q FY05	40	1Q FY06	0	NONE	0	120	0
JSLSCAD													
TD/D S - Evaluation of Engineering Changes	MIPR	JPM NBC CA, APG, MD	U	1150	100	1Q FY05	100	1Q FY06	100	1Q FY07	0	1450	870
TD/D S - ILS Analysis and Documentation	MIPR	JPM NBC CA, APG, MD	U	2720	100	1Q FY05	100	1Q FY06	100	1Q FY07	0	3020	2315
TD/D S - Prepare Technical Manuals and Documents	MIPR	JPM NBC CA, APG, MD	U	1320	150	1Q FY05	500	1Q FY06	750	1Q FY07	0	2720	650
ES S - T&E Subject Matter Expert Support	PO	Various	U	0	0	NONE	200	2Q FY06	0	NONE	0	200	0

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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PCADE													
ES S - Engineering Support	MIPR	Various	U	0	350	2Q FY05	0	NONE	0	NONE	0	350	0
Subtotal II. Support Costs:				8851	4954		9527		3509		0	26841	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
OTHT S - WSLAT Methodology Testing	MIPR	DPG, UT	U	0	0	NONE	1732	2Q FY06	0	NONE	0	1732	0
OTHT SB - LRU Validation Tests	PO	Various	U	0	0	NONE	430	2Q FY06	0	NONE	0	430	0
OTHT S - Modeling & Simulation Engineering Test	PO	Edgewood Chemical Biological Center, APG, MD	U	0	0	NONE	1010	1Q FY06	0	NONE	0	1010	0
OTHT S - Preliminary Chamber Design	C/CPFF	TBS	U	0	0	NONE	700	2Q FY06	0	NONE	0	700	0
OTHT SB - Procure WSLAT Test Consumables	MIPR	CBMS, Ft. Detrick, MD	U	0	0	NONE	1000	1Q FY06	0	NONE	0	1000	0
OTHT S - Conduct WSLAT Record Test	PO	Various	U	0	0	NONE	0	NONE	1017	1Q FY07	0	1017	0

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBSDS													
OTE S - Planning and Operational Testing I	MIPR	AFOTEC, Albuquerque, NM	U	818	320	2Q FY05	0	NONE	0	NONE	0	1138	0
DTE S - Production Verification Test	MIPR	Developmental Test Command, APG, MD	U	100	1764	1Q FY05	0	NONE	0	NONE	0	1864	0
OTE S - Operational Testing (MOT&E)	MIPR	Operational Test Command, FT Hood, TX	U	700	3170	2Q FY05	0	NONE	0	NONE	0	3870	0
OTE S - DT/OT Evaluation	MIPR	AEC, APG, MD	U	450	470	2Q FY05	0	NONE	0	NONE	0	920	0
OTHT SB - Initiate demonstration of Increment 2 technologies	MIPR	DTE, DPG, UT	U	0	630	2Q FY05	0	NONE	0	NONE	0	630	0
OTHT S - Test & Evaluation Infrastructure	PO	Various	U	0	0	NONE	0	NONE	2000	2Q FY07	0	2000	0
DTE S - PVT Test Site	MIPR	Eglin Air Force Base, Eglin, FL	U	0	138	2Q FY05	0	NONE	0	NONE	0	138	0
JBSDS II													
OTHT S - Initiate Inc II developmental and operational test planning and developmental testing	MIPR	DTC, APG MD	U	0	0	NONE	893	1Q FY06	1314	1Q FY07	0	2207	0
DTE S - Complete Inc I Developmental Evaluation	MIPR	Various	U	0	0	NONE	1156	1Q FY06	0	NONE	0	1156	0
OTE S - Inc I Operational Test and Evaluation	MIPR	OTC/AEC/AFOTEC, Location Various	U	0	0	NONE	4098	2Q FY06	1000	1Q FY07	0	5098	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT SB - Agent Simulant Correlation	MIPR	TBS, JPM NBC	U	0	0	NONE	630	2Q FY06	1737	1Q FY07	0	2367	0
OTHT S - CB Standoff Chamber Test Capability	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	1737	1Q FY07	0	1737	0
OTHT S - Field Simulant Challenge Test and Cloud Characterization	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	1737	1Q FY07	0	1737	0
OTHT S - Additional Test Grid Development	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	1737	1Q FY07	0	1737	0
OTHT S - Turnkey packages	MIPR	Various	U	0	0	NONE	0	NONE	1738	3Q FY07	0	1738	0
OTE S - Spectral Characterization Instrument	MIPR	Michigan Aerospace, Michigan	F	0	0	NONE	893	1Q FY06	0	NONE	0	893	0
OTE S - Update Inc I T&E	MIPR	OTC, AEC, AFOTEC, Location Various	U	0	0	NONE	0	NONE	1500	1Q FY07	0	1500	0
JCAD													
OTHT S - Evaluate Commercial Detectors (Increment 1)	MIPR	Various	U	5700	0	NONE	5340	2Q FY06	2000	1Q FY07	0	13040	0
OTHT S - Evaluate Commercial Detectors (Increment 2)	MIPR	Various	U	0	0	NONE	0	NONE	1500	1Q FY07	0	1500	0
OTHT SB - (T&E) Agent simulant dissemination systems	MIPR	Various	U	0	0	NONE	2200	3Q FY06	0	NONE	0	2200	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCBRAWM													
DTE S - Developmental/Operational Testing	MIPR	TBS	U	0	0	NONE	0	NONE	6930	2Q FY07	0	6930	0
JSLNBCRS													
OTHT SB - Conduct FAT/PVT of HMMWV	MIPR	Various	U	3200	2632	2Q FY05	0	NONE	0	NONE	0	5832	0
DTE S - LAV DT I	MIPR	Dugway Proving Ground, Dugway, UT	U	50	1638	2Q FY05	0	NONE	0	NONE	0	1688	0
OTHT SB - MOTE Test Planning & Prep OTC	PO	OTC, FT Hood, TX	U	4147	2600	1Q FY05	2085	2Q FY06	0	NONE	0	8832	0
OTHT C - Test CUGR & P3I ACTD programs in the JSLNBCRS	MIPR	TBS	U	0	0	NONE	0	NONE	270	1Q FY07	0	270	0
JSLSCAD													
OTE S - Remote Vapor Sensing to Support NRC Findings (M&S)	PO	Various	U	3206	2000	1Q FY05	2000	1Q FY06	4500	1Q FY07	0	11706	0
OTHT SB - Limited Objective Experiment-Remote Sensing Systems	PO	Various	U	0	7209	2Q FY05	3840	2Q FY06	7132	2Q FY07	0	18181	0
OTE S - Evaluate Background Data	PO	Various	U	0	0	NONE	4500	2Q FY06	2000	1Q FY07	0	6500	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT S - Methodology Prove-out/Field of Regard Study	MIPR	Various	U	0	1200	2Q FY05	0	NONE	0	NONE	0	1200	0
OTE S - IOT&E on NBCRS Platforms (Increment I)	MIPR	Various	U	0	0	NONE	1900	2Q FY06	0	NONE	0	1900	0
PCADE													
OTHT S - Evaluate Candidate Technologies	MIPR	Various	U	0	3492	2Q FY05	0	NONE	0	NONE	0	3492	0
Subtotal III. Test and Evaluation:				18371	27263		34407		39849		0	119890	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
PM/MS S - Project Management	MIPR	JPM BD, APG, MD	U	500	440	1Q FY05	0	NONE	1163	2Q FY07	0	2103	0
PM/MS SB - WSLAT Project Management	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	575	1Q FY06	0	NONE	0	575	0
JBSDS													
PM/MS S - Program Management/Management Support	MIPR	JPM BD, APG, MD	U	2799	1282	1Q FY05	0	NONE	0	NONE	0	4081	0
PM/MS S - Other Services (Army, Navy, and Air Force)	MIPR	Various	U	984	667	1Q FY05	0	NONE	0	NONE	0	1651	0
PM/MS S - Modeling and simulation analysis, market research and CAIV	MIPR	Various	U	1480	275	1Q FY05	0	NONE	0	NONE	0	1755	0
JBSDS II													
PM/MS S - JPM BD, APG, MD	MIPR	JPM BD, APG, MD	U	0	0	NONE	3041	1Q FY06	1300	1Q FY07	0	4341	0
PM/MS S - PM/MS other services (USN, USMC, USAF)	MIPR	Various	U	0	0	NONE	368	1Q FY06	249	1Q FY07	0	617	0
PM/MS S - Modeling and Simulation Analysis	MIPR	Various	U	0	0	NONE	0	NONE	372	1Q FY07	0	372	0
JCAD													
PM/MS SB - Joint Service Support	MIPR	Various	U	8293	0	NONE	956	1Q FY06	0	NONE	0	9249	0
JCBRAWM													
PM/MS S - Joint Service Support	MIPR	TBS	U	0	0	NONE	0	NONE	420	1Q FY07	0	420	0

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSLNBCRS													
PM/MS SB - Project/Program Management	MIPR	JPM NBC CA, APG, MD	U	2050	1404	1Q FY05	642	1Q FY06	0	NONE	0	4096	0
JSLSCAD													
PM/MS S - Management and Systems Engineering Support	MIPR	JPM NBC CA, APG, MD	U	6008	1087	1Q FY05	1129	1Q FY06	1586	1Q FY07	0	9810	2580
PM/MS S - Joint Service Support	MIPR	Various	U	0	1700	1Q FY05	1700	2Q FY06	1700	1Q FY07	0	5100	0
PCADE													
PM/MS S - Joint Service Support	MIPR	Various	U	0	150	2Q FY05	0	NONE	0	NONE	0	150	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	810	NONE	0	NONE	0	810	0
Subtotal IV. Management Services:				22114	7005		9221		6790		0	45130	

Remarks:

TOTAL PROJECT COST:	119275	63966		83605		64689		0	331535	

Exhibit R-4a, Schedule Profile

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BUDGET ACTIVITY
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BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
IBADS																																
Fielding Support	>>							4Q																								
JBPDS																																
Multi-service Operational Test and Evaluation (IOT&E) (Phase II through V)	1Q	2Q																														
Milestone (MS) C - LRIP			3Q			2Q																										
Block I First Unit Equipped (FUE)	1Q																															
Select JBPDS LRUs for Upgrade						2Q																										
Design and Validate selected Upgrades						2Q						4Q																				
Multi-service Operational Test and Evaluation (IOT&E) (Phase VI) FOT&E														2Q	3Q																	
Whole System Live Agent Test								4Q						2Q																		
MS C Full Rate Production Decision																			3Q	4Q												
JBSDS																																
Increment I JBSDS Milestone C (Low Rate Initial Production (LRIP)			3Q																													
Increment I JBSDS LRIP Contract Award			3Q																													
Increment I JBSDS LRIP (2 Systems)			3Q			2Q																										

Exhibit R-4a, Schedule Profile

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
CA5

D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JBSDS (Cont)								
Increment I JBSDS Engineering Design Test		1Q 2Q						
Increment I JBSDS LRIP (4 Systems)		2Q — 4Q						
Increment I JBSDS Follow-on LRIP IPR		2Q						
Increment I JBSDS Multi-Service Operational Test & Evaluation (MOT&E)			2Q 3Q					
Increment I JBSDS Full Rate Production			4Q	— 4Q				
Increment I JBSDS First Unit Equipped (FUE)				1Q				
JBSDS II								
Increment II Technology Modeling	4Q	—	— 3Q					
Increment II Requirements Trade-Off Analysis		2Q —	— 3Q					
Increment II Technology Demo		3Q						
Increment II Fluorescence Study/Algorithm Update			1Q —	— 4Q				
Increment II Prototype Development				1Q —	— 3Q			

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BA5 - System Development and Demonstration (SDD)

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PROJECT
CA5

D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JBSDS II (Cont)																																
Increment II Field Demo																				4Q												
Increment II CDD Update											3Q	—	—	—	—	4Q																
Increment II JBSDS Milestone B																				4Q												
Increment II Upgrade Increment I																	1Q	—	—	4Q												
Increment II JBSDS System Development and Demonstration (SDD)																					1Q	—	—	—	—	2Q						
Increment II JBSDS Developmental Testing (DT)																									3Q	—	—	—	—	3Q		
Increment II JBSDS Milestone C																														3Q		
Increment II JBSDS Low Rate Initial Production (LRIP)																														3Q	4Q	
JCAD																																
Technical Evaluation and Analysis of Data				4Q	—	—	—	—	—	—	—	4Q																				
Milestone C - Low Rate Initial Production (LRIP) Decision													1Q																			
Multi-service Operational Test and Evaluation (MOT&E)														2Q																		

Exhibit R-4a, Schedule Profile

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BUDGET ACTIVITY
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BA5 - System Development and Demonstration (SDD)

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PROJECT
CA5

D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
Full Rate Production (FRP) Decision																4Q																
JCBRAWM																																
6.5 Contractor Test & Evaluation Efforts													1Q			4Q																
Operational/Development Test																	1Q				1Q											
Milestone A Increment 2/3																				4Q												
Milestone C Increment 1																						2Q										
Milestone B Increment 2/3																												4Q				
JSLNBCRS																																
Chemical Test CBMS Block II	>>	2Q																														
Development and Testing				4Q				4Q																								
Milestone C Low Rate Initial Production (LRIP)		2Q																														
Engineering Developmental Test (EDT) II LAV Variant				4Q																												
LAV Formal Qualification Test (FQT)							3Q	4Q																								
HMMWV (LRIP) First Article Test (FAT)								4Q																								

Exhibit R-4a, Schedule Profile

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BUDGET ACTIVITY
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D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JSLNBCRS (Cont)																																
HMMWV/LAV Production Verification Test								4Q	1Q																							
Multi-service Operational Test and Evaluation (MOT&E) for HMMWV and the LAV											3Q																					
Milestone C Full Rate Production (FRP) IPR												4Q																				
JSLSCAD																																
Support Stryker NBCRV Pre Qualification Test (PQT) Testing	>>	—	—	4Q																												
Increment II - Evaluation of Commercial Systems					2Q	—	—	—	1Q																							
Increment II - Joint Service Milestone C Low Rate Initial Production (LRIP)															3Q																	
Increment II - Initial Operational Test and Evaluation (IOT&E) of Commercial Systems																			3Q	4Q												
PCADE																																

Exhibit R-4a, Schedule Profile

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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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
PCADE (Cont)								
Evaluate Candidate Detection Technologies/Systems		2Q — 4Q						

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

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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PROJECT
CM5

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CM5	HOMELAND DEFENSE (SDD)	8754	390	0	0	0	0	0	0	9144

A. Mission Description and Budget Item Justification:

Project CM5 HOMELAND DEFENSE (SDD): The Force Protection - CB 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.

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PROJECT
CM5

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.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	8754	387	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 1975 WMD CST- Conducted Developmental Testing for ALS Increment I.
- 1051 WMD CST- Completed UCS Increment I Prototypes.
- 750 WMD CST- Conducted Logistics Analysis for ALS Increment I.
- 2140 WMD CST- Conducted Developmental Testing (DT) for UCS Increment I.
- 1400 WMD CST- Continued Operational Assessment (OA) for UCS Increment I.
- 1438 WMD CST- Provided government engineering and management support.

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FY 2005 Accomplishments (Cont):
Total 8754

FY 2006 Planned Program:

- 387 WMD CST- Complete Operational Assessment (OA) of the UCS Increment I and provide government engineering and planning support.

Total 387

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	3	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 3 SBIR

Total 3

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BUDGET ACTIVITY
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C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1313	1536	1533	0	0	0	0	0	4382
JS0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	13290	53499	9214	0	0	0	0	0	76003
JS0500 CB INSTALLATION FORCE PROTECTION PROGRAM	91160	141793	76943	84849	90369	63634	61899	Cont	Cont

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PROJECT
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D. Acquisition Strategy:

WMD CST

This program utilizes multiple acquisition vehicles to deliver a CBRN capability to the WMD CSTs and the USAR Reconnaissance/Decontamination Platoons.

UCS Increment I:
The UCS Increment I program consists of the integration of additional Command, Control, Communication, Computer, and Intelligence (C4I) equipment and Non-Developmental Items (NDI) to allow the UCS system to meet all objective requirements as outlined in the validated Capability Production Document (CPD).

ALS Increment I:
The ALS Increment I 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 in the Operational Requirements Document (ORD).

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).

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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
SW SB - UCS Increment I - Prototype Communications (C4I) equipment	MIPR	Naval Air Warfare Center Aircraft Division, St. Inigoes, MD	U	331	1051	2Q FY05	0	NONE	0	NONE	0	1382	0
SW SB - ALS Blk I - Analytical Detection Equipment Prototypes	MIPR	Edgewood Chemical Biological Center, Aberdeen, MD	U	0	1000	4Q FY05	0	NONE	0	NONE	0	1000	0
Subtotal I. Product Development:				331	2051		0		0		0	2382	

Remarks:

II. Support Costs: Not applicable

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
DTE S - ALS Blk I - Developmental Test (PQT)	MIPR	Aberdeen Proving Ground, Aberdeen, MD	U	0	975	4Q FY05	0	NONE	0	NONE	0	975	0
DTE S - UCS Increment I - Developmental Testing	MIPR	Aberdeen Proving Ground, Aberdeen, MD	U	0	2140	2Q FY05	0	NONE	0	NONE	0	2140	0
OTE S - UCS Increment I - Operational Assessment	MIPR	Aberdeen Proving Ground, Aberdeen, MD	U	0	1400	4Q FY05	387	1Q FY06	0	NONE	0	1787	0
Subtotal III. Test and Evaluation:				0	4515		387		0		0	4902	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
PM/MS S - Management Services	MIPR	PM WMD CSS, APG, MD	U	614	1438	3Q FY05	0	NONE	0	NONE	0	2052	0
PM/MS SB - Analytical Laboratory System Block I - Logistics Analysis	PO	Information Resource Management Ltd., Lexington Park, MD	C	0	750	3Q FY05	0	NONE	0	NONE	0	750	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	3	NONE	0	NONE	0	3	0
Subtotal IV. Management Services:				614	2188		3		0		0	2805	
Remarks:													
TOTAL PROJECT COST:				945	8754		390		0		0	10089	

Exhibit R-4a, Schedule Profile

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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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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																																
ALS INCREMENT I PROGRAM	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1Q														
Incr I - Award Contract											3Q																					
Incr I - System Verification Test												4Q																				
Incr I - Production												4Q	—	—	—	—	—	1Q														
UCS INCREMENT I PROGRAM	1Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2Q													
Incr I - Prototyping-Platform Installation						2Q	—	4Q																								
Incr I - Developmental Testing (DT)									1Q																							
Incr I - Operational Assessment (OA)										2Q																						
Incr I - Award Production											3Q	—	—	—	—	—	—	—	2Q													

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

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
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PE NUMBER AND TITLE
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PROJECT
CO5

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CO5	COLLECTIVE PROTECTION (SDD)	2460	662	12581	21450	28306	20466	18826	Continuing	Continuing

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, Radiological, and Nuclear (CBRN) 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 - Provides needed improvements and cost saving standardization to fielded fixed site, building, shipboard, and vehicle collective protection systems. The program focuses 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 will reduce logistics burden while maintaining the industrial base.

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JECP - Results of a Baseline Capability Assessment conducted by the Joint Requirements Office identified expeditionary CP as the highest priority capability gap within the commodity area. JECP is a new start program that will address the need to reduce size, weight, power consumption, and logistics footprint of current CP systems, equipment and/or components. JECP will provide a portable and adaptable CP capability to protect and sustain the Joint Expeditionary Force and allow them to operate safely, at near-normal levels of effectiveness and efficiency, while under a CBRN threat or hazard area.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JOINT COLLECTIVE PROTECTION EQUIPMENT	2460	656	2582
RDT&E Articles (Quantity)	0	0	0

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

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FY 2005 Accomplishments:

- 510 JCPE - Completed development and testing of a Collectively Protected Expeditionary Latrine (CPEL) for the Collectively Protected Expeditionary Medical System (CP EMEDS). Completed development and testing of a modified M28 liner for Large Capacity Shelters (LCS). Completed development and testing to increase efficiency of collective protection system supply fan motors to operate at peak performance over the entire range of filter loading. Completed design and testing of improvements to liner material, construction, and enclosures. Completed testing of improved airlock door systems to increase durability and decrease life cycle costs for all existing CB shelter systems utilizing the Bump Through Door Airlocks. Completed development and testing of a filter moisture indicator. Completed development and testing of a redesigned CP EMEDS collective protection liner systems for use in the Chemically Protected Deployable Medical Systems (CP DEPMEDS) version of the Small Shelter System (SSS). Completed comprehensive engineering study and analysis of the Collective Protection Equipment (CPE) systems used with the Patriot Missile system to evaluate and investigate potential upgrades/improvements using current technologies. Completed testing of the M48A1 alternate packaging design to lower life cycle costs. Continued program management and Integrated Product Team (IPT) support.

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PROJECT
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FY 2005 Accomplishments (Cont):

- 1950 JCPE - 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 CFM gas filters. Completed integration and testing of a Tunnel Airlock Litter Patient (TALP) system with a Modular General Purpose Tent System (MGPTS). Continued testing of 100/200 Cubic Feet per Minute (CFM) gas filters with new media to provide protection against selected Toxic Industrial Chemicals (TICs). Continued identification and testing of a second source for individual distribution breathing air hose. Completed development and testing of an integrated SSS Contamination Control Area (CCA) / airlock. Continued development of shipboard CP automation. Continued development and testing of collective protection system blast operational mitigation techniques. Continued the development of documentation to fully support the CP EMEDS and Collective Protection System (CPS) liner systems.

Total 2460

FY 2006 Planned Program:

- 271 JCPE - Complete the development of documentation to fully support the CP EMEDS and Collective Protection System (CPS) liner systems. Complete identification and testing of a second source for individual distribution breathing air hose. Complete development and testing of reliability improvements to the Fan Filter Assembly (FFA)-400 and M28 blowers. Complete live agent testing of improved 100/200 CFM gas filters. Complete testing of 100/200 CFM gas filters with new media to provide protection against selected TICs. Complete development and testing of collective protection system, operational blast mitigation techniques. Complete development of shipboard CP automation. Continue program management and IPT support.

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BA5 - System Development and Demonstration (SDD)

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PROJECT
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FY 2006 Planned Program (Cont):

- 385 JCPE - Complete environmental qualification of simplified filter housing. Complete technical data package for CPEL. Initiate a test and surveillance effort to better understand factors affecting service life and capacity of filters for land-based facilities. Complete applicability of High Efficiency Particulate Arresting (HEPA) filter studies to CBRN defense.

Total 656

FY 2007 Planned Program:

- 2032 JCPE - Initiate changes to the technical data package on improvement to 28 Volt Direct Current motor on the M93 gas particulate filter unit. Continue program management, JPEO oversight, and IPT support.
- 550 JCPE - Continue the test and surveillance effort to better understand factors affecting service life and capacity of filters for land-based facilities. Initiate development and testing of BASE-X Shelter liner.

Total 2582

	FY 2005	FY 2006	FY 2007
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	0	0	9999
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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FY 2007 Planned Program:

- 1473 JECP - Update the Single Acquisition Management Plan (SAMP). Provide Program Management Office (PMO) and subject matter expert support to the Joint Requirements Office (JRO) in update of the Concept of Operation (ConOps) and development of the Capability Production Document (CPD). Initiate an update to the Systems Engineering Management Plan (SEMP) and the Test & Evaluation Master Plan (TEMP) along with all requisite documentation to support a MS C decision.
- 5385 JECP - Award contract for prototype development and testing including an Early Operational Assessment (EOA). Integrate contractor into the joint IPT structure. Expand the government generated Work Breakdown Structure (WBS) to include contractor details. Translate Performance Specification (P-Spec) into a documented design. Continue program risk analysis and management. Conduct technical reviews including a Systems Requirements Review (SRR), System Functional Review (SFR) and Preliminary and Critical Design Reviews.
- 1151 JECP - Initiate development of a test resources and results database. Develop methodology and procedures in support of the overall test strategy. Secure equipment and facilities and conduct an EOA of prototypes in relevant environments.
- 1990 JECP - Through 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 Logistic Support Plan.

Total 9999

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	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	6	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 6 SBIR

Total 6

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BA5 - System Development and Demonstration (SDD)

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PROJECT
CO5

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	9338	10377	8833	3645	5217	0	0	0	37410
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	5962	0	0	0	0	0	0	0	5962
JP0911 CP FIELD HOSPITALS (CPFH)	0	4800	4089	3455	3430	3549	3626	Cont	Cont
JP1111 JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)	0	0	0	0	5069	6305	8240	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	25676	16237	30586	31051	32001	33118	33827	Cont	Cont

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PROJECT
CO5

D. Acquisition Strategy:

JCPE

The JCPE acquisition strategy is 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, are delivered via a performance specification that can then be implemented by respective Services through an Engineering Change Proposal (ECP) process. All modified components will be fabricated and tested to ensure Service compatibility. Fielding will be accomplished through phased replacement or attrition through the supply system. Existing procurement contracts are leveraged to expedite fielding improvement upgrades.

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JECP

Pursue an incremental development strategy based on 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, exercise a contract option 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, compete 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)

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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
HW C - TDP for CPEMEDS, CPS, & A2S	MIPR	ECBC, Edgewood, MD	U	0	150	1Q FY05	0	NONE	0	NONE	0	150	0
HW C - Environmental Qualification of Simplified Filter Housing	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	20	1Q FY06	0	NONE	0	20	0
HW S - TDP for CPEL	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	150	1Q FY06	0	NONE	0	150	0
HW C - Land-based Filter Surveillance Testing	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	25	1Q FY06	0	NONE	0	25	0
HW S - HEPA filter studies to CBR defense	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	25	1Q FY06	0	NONE	0	25	0
HW C - 28VDC M93 Gas Particulate Filter Unit	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	200	1Q FY07	0	200	0
HW C - Base X Liner Development	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	250	1Q FY07	0	250	0
JECP													
SW SB - Prototype Development	C/CPIF	TBS	U	0	0	NONE	0	NONE	5385	2Q FY07	0	5385	0
Subtotal I. Product Development:				0	150		220		5835		0	6205	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JECP													
TD/D S - MS C Documentation	MIPR	Various	U	0	0	NONE	0	NONE	1990	2Q FY07	0	1990	0
Subtotal II. Support Costs:				0	0		0		1990		0	1990	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
DTE C - Blower Reliability and Environmental Testing	MIPR	ECBC, Edgewood, MD	U	0	72	1Q FY05	0	NONE	0	NONE	0	72	0
OTHT SB - 100/200 CFM Gas Filter - Live Agent Testing	MIPR	RDECOM, APG, MD	U	782	620	1Q FY05	0	NONE	0	NONE	0	1402	582
OTHT C - TALP Testing for MGPTS	MIPR	Various	U	275	40	1Q FY05	0	NONE	0	NONE	0	315	0
OTHT SB - Modified 100/200 CFM Filter for TICs - Testing	MIPR	ECBC, Edgewood, MD	U	0	450	1Q FY05	0	NONE	0	NONE	0	450	0
DTE C - Individual distribution Breathing Air Hose	MIPR	NSWCDD, Dahlgren, VA	U	200	30	1Q FY05	0	NONE	0	NONE	0	230	0

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT C - SSS CCA/Airlock	MIPR	HSW/YACN Brooks City Base, San Antonio, TX	U	0	233	1Q FY05	0	NONE	0	NONE	0	233	250
OTHT C - Shipboard CP Automation	WR	NSWCDD, Dahlgren, VA	U	50	30	1Q FY05	50	1Q FY06	0	NONE	0	130	50
DTE S - CP Protection Blast Operational Analysis	MIPR	HSW/YACN Brooks City Base, San Antonio, TX	U	80	300	1Q FY05	0	NONE	0	NONE	0	380	0
DTE C - M48A1 Alternate Packaging Design	MIPR	ECBC, Edgewood, MD	U	0	10	2Q FY05	0	NONE	0	NONE	0	10	0
DTE C - Environmental Qualification of Simplified Filter Housing	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	40	1Q FY06	0	NONE	0	40	0
OTHT C - Land-based Filter Surveillance Testing	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	125	1Q FY06	475	1Q FY07	300	900	0
JECP													
DTE S - Test Results & Resource Data Base	MIPR	TBS	U	0	0	NONE	0	NONE	1151	1Q FY07	0	1151	0
Subtotal III. Test and Evaluation:				1387	1785		215		1626		300	5313	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
PM/MS S - IPT Support	MIPR	Various	U	756	190	1Q FY05	75	1Q FY06	200	1Q FY07	0	1221	820
PM/MS S - Overall Program Management & IPT Oversight	MIPR	NSWCDD, Dahlgren, VA	U	1457	335	1Q FY05	146	1Q FY06	357	1Q FY07	0	2295	1403
PM/MS S - JPEO Oversight	MIPR	JPEOCBD, Falls Church, VA	U	0	0	NONE	0	NONE	1100	4Q FY07	0	1100	0
JECP													
PM/MS S - PMO & IPT	MIPR	Various	U	0	0	NONE	0	NONE	1473	1Q FY07	0	1473	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	6	NONE	0	NONE	0	6	0
Subtotal IV. Management Services:				2213	525		227		3130		0	6095	
Remarks:													
TOTAL PROJECT COST:				3600	2460		662		12581		300	19603	

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D. Schedule Profile:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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 Modified M28 Liner for MGPTS	>> 2Q							
Market Survey and Test Latrine CPEMEDS	>> 2Q							
Develop and Test FFA400-100 and M93 MCPE	>>		3Q					
Develop Modified M28 Liner-Lg Cap Shelters	>>	4Q						
Develop and Test Improved Ship CPS Motors	>>	4Q						
Agent Testing 100/200 CFM Gas Filters	>>		4Q					
Develop Improved Liner-Mat/Constr/Closures	>>	3Q						
Develop Improved Airlock	>>	3Q						
Develop and Test TALP for MGPTS	>>	3Q						
Develop and Test Switchover/Pressure Regulator		1Q 3Q						
Develop and Test Dust and Sand Mtr/Blwr Hose Kit		1Q 3Q						

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CO5

D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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)								
Develop and Test Timer-M28 CPE/CBPS Airlocks		1Q — 3Q						
Develop and Test Radiant Barrier Matl-TEMPER		1Q — 3Q						
Develop and Test 100/200 CFM Gas Filters-TICs		1Q —	— 2Q					
CB Shelter Extreme Environments Study	1Q — 4Q							
Individual Breathing Air Hose Improvements	1Q —	—	— 4Q					
Develop and Test Filter Moisture Indicator	1Q —	— 3Q						
Develop and Test SSS CCA/Airlock	1Q —	— 4Q						
Develop and Test Ship CP Automation	1Q —	—	— 4Q					
Develop and Test CP Blast Operations Analysis	1Q —	—	— 2Q					
Modify CPEMEDS Liner for CPDEPMEDS SSS	1Q —	— 4Q						
Patriot Missile CP Upgrade Recommendations	1Q —	— 4Q						

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D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
TDP for CP EMEDS, CPS, & A2S							3Q	—	—	—	—	4Q																				
Environmental qualification of simplified filter housing									1Q	—	—	4Q																				
TDP for CPEL									1Q	—	—	4Q																				
Land-based Aged Filter Capacity									1Q	—	—	—	—	—	—	—	—	—	—	4Q												
HEPA filter studies to CBR defense									1Q	—	—	4Q																				
28VDC M93 Gas Particulate Filter Unit													1Q	—	—	4Q																
Base X Liner													1Q	—	—	—	—	—	—	4Q												
JECP																																
Technology Demonstration Testing											3Q	—	1Q																			
MS-B Decision													1Q																			
DRAFT System Development Demonstration Contract RFP													1Q																			
System Development Demonstration Contract Award														2Q																		
Prototype System Development														2Q	—	—	—	—	3Q													
OA																			3Q	4Q												

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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)								
Design Readiness Review					1Q			
DT/OT					1Q — 4Q			
CPD					3Q			
MS-C Decision					4Q			
LRIP					4Q	— 4Q		

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
DE5	DECONTAMINATION SYSTEMS (SDD)	4169	16496	11050	5397	15053	15353	7365	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DE5 DECONTAMINATION SYSTEMS (SDD): This project funds System Development and Demonstration (SDD) of decontamination equipment for the Joint Service Family of Decontamination System (JSFDS) and the Joint Service Sensitive Equipment Decontamination (JSSED).

The funding for JSFDS program covers the Joint Service Personnel/Skin Decontamination System (JSPDS) and the Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS) programs. 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 and gloves and small scale weapons (under 0.50 caliber). The JSTDS-SS 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 system will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment during thorough decontamination operations. It will be a family of systems that will provide thorough decontamination capabilities for sensitive equipment (e.g. avionics, computers, electronics and environmental system equipment). JSSED Increment I will be a closed loop non-aqueous decontamination system that will remove and/or neutralize threat agents from sensitive equipment used on the integrated battlefield.

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

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JS FAMILY OF DECON SYSTEMS (JSFDS)	4169	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 2669 JSFDS/JSPDS - Completed DT II, including extended packaging testing, material compatibility testing, system level compatibility testing, live agent testing and field durability developmental testing.
- 500 JSFDS/JSPDS - Conducted Performance Based Logistics (PBL) Business Case Analysis (BCA) to determine optimum logistics support strategy. Updated logistics and training documentation based on test results.
- 1000 JSFDS - Congressional Interest Item. Prepared and conducted a study of passive materials for chemical and biological decontamination.

Total 4169

	FY 2005	FY 2006	FY 2007
JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM	0	2449	2051
RDT&E Articles (Quantity)	0	0	0

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

DATE **February 2006**

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 Planned Program:

- 1901 JSPDS - Conduct Initial Operational Test and Evaluation (IOT&E) to support full rate production decision and conduct packaging retest of modified pouch packaging.
- 548 JSPDS - Update program documentation to support MS C full rate production decision, update logistics support documentation including fielding plans, and begin implementation of the support strategy identified by the Performance Based Logistics (PBL) and the Business Case Analysis (BCA).

Total 2449

FY 2007 Planned Program:

- 1222 JSPDS - Complete program documentation updates and obtain MS C full rate production decision. Transition to support strategy identified by the PBL BCA.
- 229 JSPDS - Perform shelf-life extension testing on decontaminants.
- 600 JSPDS - Perform follow-on live agent testing with additional threat agents.

Total 2051

	FY 2005	FY 2006	FY 2007
JS SENSITIVE EQUIP DECON	0	1488	1250
RDT&E Articles (Quantity)	0	0	0

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

DATE **February 2006**

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 Planned Program:

- 1488 JSSED - Award SDD contract for pre-clean kits.

Total 1488

FY 2007 Planned Program:

- 1250 JSSED - Award SDD contract for JSSED.

Total 1250

	FY 2005	FY 2006	FY 2007
JOINT SERVICE TRANSPORTABLE DECONTAMINATION SYSTEM - SMALL SCALE	0	12399	7749
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 2294 JSTDS-SS - Initiate initial Operational Test and Evaluation (IOT&E) to support full rate production decision.
- 3400 JSTDS-SS - Perform DT II which includes live chemical and biological agent testing, extensive material compatibility and efficacy testing, environmental testing and shelf-life testing.
- 1800 JSTDS-SS - Update program documentation, perform an independent logistics assessment, validate life cycle cost estimate and obtain full rate production decision.
- 1400 JSTDS-SS - Procure decontaminant (40,000 gallons) and interim contract or logistics support for testing.

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

DATE **February 2006**

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 Planned Program (Cont):

- 3505 JSTDS-SS - Conduct PBL and BCA to determine optimum logistics support strategy for the JSTDS-SS hardware and decontaminant(s). Update logistics and training documentation based on test results. Prepare fielding plans. Develop and validate shelf life surveillance plan for JSTDS-SS decontaminant.

Total 12399

FY 2007 Planned Program:

- 1209 JSTDS-SS - 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.
- 5000 JSTDS-SS - Complete Initial Operational Test and Evaluation (IOT&E) to support full rate production decision.
- 1540 JSTDS-SS - Update program, logistics and training documentation to reflect configuration changes, and test results. Prepare plans to modify fielded systems, as required.

Total 7749

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	160	0
RDT&E Articles (Quantity)	0	0	0

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

DATE **February 2006**

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 Planned Program:

- 160 SBIR

Total 160

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JD0055 JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM (JSPDS)	0	0	9584	12775	0	0	0	0	22359
JD0056 JS TRANS DECON SYSTEM - SMALL SCALE (JSTDS-SS)	0	2911	7209	11343	13432	18970	23889	Cont	Cont
JD0061 JOINT SERVICE SENSITIVE EQUIPMENT DECON (JSSED)	0	0	0	0	6860	6991	6591	Cont	Cont

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

DATE
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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:

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.

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) predecessor system. 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 JSSED program will execute an evolutionary acquisition strategy with a two-increment approach. The first increment provides capabilities required by the ORD. The second increment will incorporate additional capabilities as more funding becomes available. Increment I is a four-step approach. The first step is the Optimization Phase that will focus on the decontaminant for the JSSED system. The second step is the System Integration of the JSSED Increment I. The third step is the production phase of the JSSED Increment I variant. The fourth and final step is the spiral development of the JSSED shipboard variant. It will include two sub-phases, shipboard System Integration and shipboard production. A limited objective experiment (LOE) will be conducted prior to system integration. The LOE will allow the combat developers to operate prototype hardware and to provide input to system integration design.

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

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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 I 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 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSSED													
HW S - Build JSSED pre-clean kits	C/CPFF	TBS	C	0	0	NONE	800	2Q FY06	200	1Q FY07	0	1000	0
JSTDS SS													
HW C - JSTDS-SS - Procure decontaminant	C/FFP	TBS	C	0	0	NONE	1400	2Q FY06	0	NONE	0	1400	0
Subtotal I. Product Development:				0	0		2200		200		0	2400	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
ILS S - JSFDS JSPDS Logistics studies	MIPR	Various	U	560	250	2Q FY05	0	NONE	0	NONE	0	810	0
ILS S - JSFDS JSPDS Logistics studies	C/CPFF	Various	C	577	250	2Q FY05	0	NONE	0	NONE	0	827	0
ES S - JSFDS - Passive materials for chemical and biological decontamination study	C/FFP	Inovatia, Fayette, MO	C	0	688	2Q FY06	0	NONE	0	NONE	0	688	0
ES S - JSFDS - Third party validation of Inovatia Laboratories	MIPR	AFRL, Tyndall AFB, FL	U	0	312	1Q FY06	0	NONE	0	NONE	0	312	0
JSPDS													
ILS S - JSPDS Logistics studies	MIPR	Various	U	0	0	NONE	100	1Q FY06	400	1Q FY07	0	500	0
ILS S - JSPDS Logistics studies	C/CPFF	Various	C	0	0	NONE	100	1Q FY06	460	1Q FY07	0	560	0
JSTDS SS													
ILS S - JSTDS-SS Logistics studies	MIPR	Various	U	0	0	NONE	750	1Q FY06	0	NONE	0	750	0
ILS S - JSTDS-SS Logistics studies	C/CPFF	Various	C	0	0	NONE	750	2Q FY06	0	NONE	0	750	0
TD/D S - JSTDS-SS - Update technical documentation	MIPR	Various	U	0	0	NONE	555	2Q FY06	932	1Q FY07	0	1487	0
ILS C - JSTDS-SS - Decontaminant Shelf Life Surveillance Plan	MIPR	Various	U	0	0	NONE	650	2Q FY06	0	NONE	0	650	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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 - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ILS S - JSTDS-SS - Develop Fielding Plans	MIPR	Various	U	0	0	NONE	600	2Q FY06	0	NONE	0	600	0
Subtotal II. Support Costs:				1137	1500		3505		1792		0	7934	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
DTE S - JSFDS DT II JSPDS Testing	MIPR	Various	U	2019	1887	1Q FY05	0	NONE	0	NONE	0	3906	0
OTE S - JSFDS DT II JSPDS Testing	C/CPFF	Battelle, Columbus, OH	C	0	500	1Q FY05	0	NONE	0	NONE	0	500	0
OTHT S - JSFDS - JSPDS Test Planning	MIPR	Various		0	282	1Q FY05	0	NONE	0	NONE	0	282	0
JSPDS													
OTE S - JSPDS Initial Operational Test and Evaluation (IOT&E)	MIPR	Various	U	0	0	NONE	1901	2Q FY06	0	NONE	0	1901	0
DTE S - JSPDS Shelf life extension testing	MIPR	Various	U	0	0	NONE	0	NONE	254	1Q FY07	0	254	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE S - JSPDS Follow-on agent test	C/CPFF	Battelle, Columbus, OH	C	0	0	NONE	0	NONE	537	1Q FY07	0	537	0
JSSED													
DTE S - JSSED developmental test planning/execution	MIPR	AFOTEC, Kirtland AFB, NM	U	0	0	NONE	200	1Q FY06	567	2Q FY07	0	767	0
JSTDS SS													
OTE S - JSTDS-SS Initial Operational Test and Evaluation	MIPR	Various	U	0	0	NONE	2294	2Q FY06	5000	1Q FY07	0	7294	0
DTE S - JSTDS-SS Developmental Testing (DT II)	MIPR	Various	U	0	0	NONE	2400	1Q FY06	0	NONE	0	2400	0
DTE S - JSTDS-SS Developmental Testing (DT II)	C/CPFF	Battelle, Columbus, OH	C	0	0	NONE	1000	1Q FY06	0	NONE	0	1000	0
DTE S - JSTDS-SS Decontaminant Shelf life extension testing	MIPR	Various	U	0	0	NONE	200	2Q FY06	200	1Q FY07	0	400	0
DTE S - JSTDS-SS Decontaminant testing of objective capabilities	MIPR	Various	U	0	0	NONE	0	NONE	509	1Q FY07	0	509	0
DTE S - JSTDS-SS Decontaminant testing of objective capabilities	C/CPFF	Battelle, Columbus, OH	C	0	0	NONE	0	NONE	500	1Q FY07	0	500	0
Subtotal III. Test and Evaluation:				2019	2669		7995		7567		0	20250	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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PROJECT
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSPDS													
PM/MS S - JSPDS Programmatic Support	C/CPFF	Various	C	0	0	NONE	174	1Q FY06	200	1Q FY07	0	374	0
PM/MS S - JSPDS Programmatic Support	MIPR	Various	U	0	0	NONE	174	1Q FY06	200	1Q FY07	0	374	0
JSSED													
PM/MS S - JSSED Service Integrated Product Team Support	MIPR	Various	U	0	0	NONE	488	1Q FY06	483	1Q FY07	0	971	0
JSTDS SS													
PM/MS S - JSTDS-SS Programmatic Support	C/CPFF	Various	C	0	0	NONE	900	1Q FY06	108	1Q FY07	0	1008	0
PM/MS S - JSTDS-SS Programmatic Support	MIPR	Various	U	0	0	NONE	900	1Q FY06	500	1Q FY07	0	1400	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	160	NONE	0	NONE	0	160	0
Subtotal IV. Management Services:				0	0		2796		1491		0	4287	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
DE5

TOTAL PROJECT COST:	3156	4169		16496		11050		0	34871	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JSFDS								
JSFDS Restructuring of Requirements/ORD Acquisition Strategy	>> 2Q							
JSFDS Requirement feasibility and acquisition strategy development	1Q — 4Q							
JSFDS Compatibility Testing for JSPDS	2Q 3Q							
JSFDS Multi-purpose Decontamination System Reliability Testing	2Q — 4Q							
JSFDS Milestone (MS) B for JSPDS	3Q							
JSFDS Developmental Testing (DT) II for JSPDS	1Q —	— 4Q						
JSFDS RFP Release for JSTDS-SS	3Q							
JSFDS Procure test articles for JSTDS-SS down-selection testing	4Q							
JSFDS Paper down-selection for JSTDS-SS	4Q							
JSFDS MS B for JSTDS-SS	4Q							
JSFDS Down-selection testing (DT I) for JSTDS-SS		1Q — 3Q						
JSFDS MS C (LRIP) for JSTDS-SS		3Q						

Exhibit R-4a, Schedule Profile

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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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JSFDS (Cont)																																
JSFDS DT II for JSTDS-SS								4Q																								
JSFDS Funding Transition								4Q																								
JSPDS																																
JSPDS DT II Testing	1Q							4Q																								
JSPDS Pouch Packaging Retest									1Q																							
JSPDS IOT&E										2Q	3Q																					
JSPDS MS C (Full Rate Production)													1Q																			
JSPDS Shelf Life Extension Testing													1Q			4Q																
JSPDS Follow-on live agent testing													1Q			4Q																
JSSED																																
Phase II SDD contract award for pre-clean kits										2Q																						
Phase II Pre-clean kit design and fabrication										2Q						4Q																
Phase II Pre-clean kit testing DT/OT															3Q	4Q																
Phase II MS C for Pre-clean kits																	1Q															
Phase II - SDD contract award for JSSED														2Q																		

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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 II - Design and prototype fabrication and test														2Q	—	—	—	2Q														
Phase II - Prototype delivery (20 units at $80K each)																		2Q														
Phase II - SDD testing																		2Q	—	4Q												
Phase II - Milestone C for LRIP																				4Q												
Phase II - Production and Operational Testing																					1Q	—	—	4Q								
Phase III - FRP decision																								4Q								
Phase IV - Shipboard																												4Q	—	2Q		
JSTDS SS																																
JSTDS-SS RFP Release				4Q																												
JSTDS-SS Paper Down-selection					1Q																											
JSTDS-SS MS B						2Q																										
JSTDS-SS Down-selection Testing (DT I)							3Q	4Q																								
JSTDS-SS Operational Assessment (OA)						2Q																										
JSTDS-SS MS C (LRIP)											3Q																					

Exhibit R-4a, Schedule Profile

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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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JSTDS SS (Cont)								
JSTDS-SS DT II			1Q — 4Q					
JSTDS-SS - Develop decontaminant shelf life surveillance program			1Q — 4Q					
JSTDS-SS IOT&E				1Q				
JSTDS-SS Full Rate Production				2Q				
JSTDS-SS Live Agent Testing				1Q — 4Q				

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
IP5	INDIVIDUAL PROTECTION (SDD)	27852	19724	19663	12441	3089	3071	999	Continuing	Continuing

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) Development of a Joint Protective Aircrew Ensemble (JPACE) to standardize aircrew ensembles across the services and reduce user fatigue.

(2) JSAM is an incrementally developed Acquisition Category (ACAT) III program being conducted in two or more increments. 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/Biological (CB) warfare environment.

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DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
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The JSAM will provide head-eye-respiratory, chemical and biological (CB) protection in fixed and rotary wing aircraft. It is intended to replace six aircrew respirators currently in the DoD inventory. JSAM will have multiple variants to optimize performance for different aircraft categories. Some variants of JSAM will provide donning and doffing capability while in flight. When integrated with anti-Gravity (G) protection equipment, JSAM will provide simultaneous CB and anti-G protection to aircrew in high performance aircraft. JSAM is compatible with below the neck CB ensembles, provides flame and thermal protection, and reduces heat stress imposed by existing CB protective masks. JSAM is compatible with the use of portable oxygen systems in Army rotary wing aircraft. JSAM is targeted to provide combined capability to enable the warfighter of the 21st century to fulfill full mission requirements.

The first JSAM increment addresses the majority of the Department of Defense's (DoD's) rotary-wing aircraft [Type I/IA (Apache) systems]. Planned follow-on increments address fixed wing aircraft (Type II systems) and unique Helmet Mounted Display mask variants, such as the Top Owl (Type IB).

(3) Development of a Joint Service General Purpose Mask (JSGPM) to replace and improve upon the multiple masks currently used by U.S. ground forces; development of a Joint Service Chemical Environment Survivability Mask (JSCESM) to provide a lightweight, disposable mask for special operations; and development of an Improved Protective Mask (IPM) for the unique needs of counterproliferation missions.

(4) Validating the ability of Commercial off-the-shelf (COTS) products for a JSLIST Block II Glove Upgrade (JB2GU) to replace and improve upon the 7, 14 and 25 mil dipped butyl rubber gloves used by U.S. forces. The goal is to validate one COTS glove system with improved durability, tactility and dexterity when compared to the entire legacy butyl family.

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(5) Validating the ability of Commercial off-the-shelf products for a JSLIST Alternative Footwear Systems/Integrated Footwear System (AFS/IFS) to replace and improve upon the Chemical Protective Footwear Cover, Green/Black Vinyl Overboot, Multi-Purpose Overboot used by U.S. forces. The goal is to validate two COTS footwear systems with improved availability (through reduced volume and weight) and traction. The AFS will be a lightweight overboot for use by ground and shipboard forces while the IFS will be a sock or insert for use by Aviation, Combat Vehicle Crew and Special Mission personnel.

(6) JSLIST Spiral Development (JSLIST SD) garment to replace and improve 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 OIF lessons learned to improve upon CB suit capabilities. The effort will include using Joint Protective Air Crew Ensemble, U.S. Special Operations Command and a seams and closure effort for design improvements. The advanced materials identified through U.S. Special Operations Command, the JSLIST Alternative Source Qualification and nontraditional agent protection effort will be used. 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 2005	FY 2006	FY 2007
JOINT PROTECTIVE AIRCREW ENSEMBLE (JPACE)	3454	0	0
RDT&E Articles (Quantity)	0	0	0

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FY 2005 Accomplishments:

- 400 JPACE - Finalized program, logistics, and technical documentation required to ensure that ensembles are fully supported.
- 2454 JPACE - Completed IOT&E. Conducted MS C decision for LRIP of ensembles. Prepared documentation for contract option to manufacture LRIP ensembles.
- 600 JPACE - Finalized garment specifications and patterns. Conducted System Verification Review (SVR). Completed MS C for Full Rate Production (FRP) design.

Total 3454

	FY 2005	FY 2006	FY 2007
JS AIRCREW MASK (JSAM)	16876	14473	16313
RDT&E Articles (Quantity)	342	0	508

FY 2005 Accomplishments:

- 6671 JSAM - Completed system engineering activities for JSAM rotary wing aircraft (Type I) and the AH-64 Apache (Type IA) variants. Initiated and completed material purchase, fabrication, and assembly of 1399 JSAM Type I filters (at an average unit cost of $41), 201 Type 1 JSAM units (at an average unit cost of $1858) and 141 JSAM Type IA systems (at an average unit cost of $2141) to be utilized for Contractor/Government DT. Initiated contractor interest in fixed wing (Type II)/Helmet Mounted Display (HMD)/Top Owl Type IB variants via industry day and a draft Request for Proposal.

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FY 2005 Accomplishments (Cont):

- 5564 JSAM - Initiated Contractor/Government DT for the JSAM Type I and Type IA. Continued documentation and planning in preparation for finalization of JSAM DT and Operational Testing (OT).
- 4641 JSAM - Continued contract and government program management, logistics and sustainment planning. Initiated JSAM fixed wing (Type II)/HMD/Top Owl Type IB variants Request for Information (RFI), market research/industry day activities, and Request for Proposal actions. Contractor continued to develop production plans and processes.

Total 16876

FY 2006 Planned Program:

- 4058 JSAM - 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.
- 5824 JSAM - . Conduct and complete Government DT and evaluation for the JSAM rotary wing aircraft variation (Type I), to include the Apache variant (Type IA). Initiate Government OT, utilizing Type I and Type IA JSAM DT assets. Continue Government DT and OT planning for fixed wing (Type II)/ HMD variants.
- 4591 JSAM - Continue to provide contract and government program management, logistics and sustainment planning.

Total 14473

FY 2007 Planned Program:

- 4094 JSAM - 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.

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FY 2007 Planned Program (Cont):

- 7359 JSAM - Complete Government OT, utilizing Type I and Type IA JSAM assets. Initiate Government DT for 348 fixed wing (Type II at $4090 average per unit cost), and 160 HMD variants (at $3649 average per unit cost).
- 4460 JSAM - Continue contract and government program management, logistics and sustainment planning.
- 400 JSAM - Complete Milestone C documentation.

Total 16313

	FY 2005	FY 2006	FY 2007
JS GENERAL PURPOSE MASK	2858	0	0
RDT&E Articles (Quantity)	1000	0	0

FY 2005 Accomplishments:

- 1509 JSGPM - Completed System Demonstration. System Demonstration includes system support packages for PQT and Multiservice Operational Testing and Evaluation.
- 500 JSGPM - Completed preparation of program/project documentation. Documentation includes the SAMP and performance specifications.
- 700 JSGPM - Completed Development (PQT) and Operational (Limited User Team) Testing. Completed test and evaluation reports. Purchased 1000 test articles (at $150 each) for Multiservice Operational Test and Evaluation.

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FY 2005 Accomplishments (Cont):

- 149 JSGPM - Completed developmental Logistics Support Planning. This effort included completion of manuals and finalization of supportability plans.

Total 2858

	FY 2005	FY 2006	FY 2007
PROTECTIVE CLOTHING (JSLIST)	4664	5058	3350
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 2912 JB2GU and AFS - Completed chemical agent validation testing and completed IOT&E.
- 300 JB2GU and AFS - Completed preparations for MS C Full Rate Production (FRP).
- 1452 IFS - Completed durability testing, completed IOT&E.

Total 4664

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FY 2006 Planned Program:

- 201 JSLIST - Initiate hierarchical requirement and affordability analysis. New materials with new designs present trade-offs in about every area 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.
- 1300 JSLIST - Design a new protective suit to support Special Forces operational requirements. U.S. Special Operations Command and JSLIST Additional Source Qualification (JASQ) efforts.
- 800 JSLIST - Conduct producibility/reproducibility production base analysis. This effort includes all configuration management work and the work necessary to ensure that the design is producible (and reproducible with minimum variance) with new production methodologies.
- 2100 JSLIST - Initiate testing of design variations at the system level in aerosol and vapor system test laboratories with U.S. military personnel (only simulants are used).
- 657 JSLIST - Conduct initial design field testing. This field-testing will allow informed design selection decisions.

Total 5058

FY 2007 Planned Program:

- 397 JSLIST - Complete design field testing.
- 100 JSLIST - Purchase production representative items necessary for all Operational Testing (OT).
- 875 JSLIST - Conduct mission OT with service personnel performing specific job specialties while wearing production representative suits.

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FY 2007 Planned Program (Cont):

- 1276 JSLIST (T&E Capability) - Develop a prototype instrumented mannequin for use in testing Individual Protective Equipment (IPE), including full ensembles, with live agents. Configure chamber for IPE simulant testing.
- 702 JSLIST (T&E Capability) - Generate, validate, and verify base model and perform confirmatory testing to include live agent testing. Develop plans for live-agent testing.

Total 3350

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	193	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 193 SBIR

Total 193

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C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JI0002 JT SVC AIRCREW MASK (JSAM)	0	1800	8002	21341	43561	33542	10257	Cont	Cont
JI0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	13316	26879	32372	43999	27131	41036	40907	Cont	Cont
JI0015 JOINT PROTECTIVE AIRCREW ENSEMBLE (JPACE)	12645	23808	0	11027	0	0	0	0	47480
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	8158	6258	4954	5062	4859	0	0	0	29291
MA0400 PROTECTIVE CLOTHING	98187	37135	31404	0	0	0	0	0	166726

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D. Acquisition Strategy:

JPACE

The acquisition strategy employs a spiral development approach. Block I will address 90% of the JPACE requirements, including key performance parameters. Block II is intended to address any deficiencies found in Block I and specifically to address CB protection in a rotorwash or high velocity wind environment and to enhance the thermal burden reduction capabilities of the JPACE system. Block I includes a competitive material search for advanced material technologies addressing aviation material performance requirements from the JPACE Joint ORD. Firm Fixed Price delivery order type contracts were awarded to finalize design and verify system level requirements. These contract vehicles include quantities for System Development and Demonstration (SDD), LRIP, and FRP.

JSAM

The JSAM acquisition strategy included full and open competition for the Program Definition & Risk Reduction (PDRR) and Systems Development and Demonstration (SDD)/production efforts IAW FAR 15 (as supplemented). Two contracts were awarded for PDRR. A down-selection was made, and the contractor that was determined to be the best value offeror based on the established evaluation criteria. The SSD contact includes follow-on production options.

Cost, schedule and performance remain key to program success. This acquisition strategy supports the Government's intent to continue pursuing competition within future increments through solicitation and evaluation of other potential sources, ensuring the user receives the best value product with reduced program risk.

JSGPM

The JSGPM acquisition strategy is a combined full-scale development (System Development and Demonstration) and production with Contractor Logistics Support (CLS). The contract for development/production is based on a Joint Service performance specification with special emphasis on the lowest total ownership cost (TOC).

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PROT CLTH

The JSLIST acquisition strategy employs a spiral developmental approach, any deficiencies found in the JSLIST ensemble will be addressed to support the warfighters' mission and capabilities requirements using competitive material search.

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BA5 - System Development and Demonstration (SDD)

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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
HW C - Prototype Pattern Design	MIPR	NCTRF, Natick, MA	U	2011	150	1Q FY05	0	NONE	0	NONE	0	2161	2161
HW S - Prototype Procurement	C/FFP	Creative Apparel Associates, Belfast, ME	C	660	200	2Q FY05	0	NONE	0	NONE	0	860	570
JSAM													
HW S - Contractor Development Types I/IA	C/CPAF	AVOX, Lancaster, NY	C	13540	5634	2Q FY05	1874	2Q FY06	264	2Q FY07	91	21403	7209
SW SB - Contractor Development Type II/Top Owl	C/FPI	TBS	C	0	1037	2Q FY06	2183	2Q FY06	4030	2Q FY07	898	8148	0
JSGPM													
HW S - Develop JSGPM Hardware	C/CPIF	Avon, Inc. Cadillac, MI	C	19347	1009	1Q FY05	0	NONE	0	NONE	0	20356	0
PROT CLTH													
HW S - Protective Clothing	C/FFP	Various	C	0	0	NONE	0	NONE	147	1Q FY07	0	147	0
Subtotal I. Product Development:				35558	8030		4057		4441		989	53075	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
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BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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PROJECT
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
OTHT S - Hazard Prediction Model - Independent Verification and Validation	WR	NAWCAD, Patuxent River, MD	U	1149	100	1Q FY05	0	NONE	0	NONE	0	1249	1249
ILS S - Systems Logistics	WR	NAWCAD, Patuxent River, MD	U	599	300	1Q FY05	0	NONE	0	NONE	0	899	1012
JSAM													
TD/D SB - JSAM Logistics, Training, and Data	C/CPAF	AVOX, Lancaster, NY	C	789	646	2Q FY05	214	2Q FY06	30	2Q FY07	10	1689	188
TD/D SB - TD/D SB - JSAM Logistics, Training, and Data	C/FPI	TBS	C	0	69	2Q FY06	146	2Q FY06	255	2Q FY07	0	470	0
JSGPM													
ES S - Engineering Support	MIPR	JPM - IP, Quantico, VA	U	1306	160	1Q FY05	0	NONE	0	NONE	0	1466	2852
TD/D S - Technical Data and Documentation of JSGPM System	MIPR	JPM - IP, Quantico, VA	U	581	70	1Q FY05	0	NONE	0	NONE	0	651	1000
ILS S - Logistics Support of JSGPM System	MIPR	JPM - IP, Quantico, VA	U	726	69	1Q FY05	0	NONE	0	NONE	0	795	1700
Subtotal II. Support Costs:				5150	1414		360		285		10	7219	

Remarks:

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
OTE S - Initial Operational Test and Evaluation	MIPR	AFOTEC DET 1, Albuquerque, NM	U	1048	900	1Q FY05	0	NONE	0	NONE	0	1948	2912
OTE S - Initial Operational Test and Evaluation	MIPR	USA ATEC, Aberdeen, MD	U	198	904	1Q FY05	0	NONE	0	NONE	0	1102	1182
OTE S - Initial Operational Test and Evaluation	WR	COMOPTEVFOR, Norfolk, VA	U	160	300	1Q FY05	0	NONE	0	NONE	0	460	1256
JSAM													
OTHT SB - Govt Developmental Test	MIPR	Various	U	1723	3310	2Q FY05	3257	2Q FY06	4857	2Q FY07	1520	14667	92
OTE S - Govt Operational Test	MIPR	Various	U	706	730	2Q FY05	1939	2Q FY06	2579	2Q FY07	3380	9334	404
OTHT SB - Contractor Test and Integration Type I/IA	PO	AVOX, Lancaster, NY	C	616	1456	2Q FY05	483	2Q FY06	68	2Q FY07	23	2646	185
OTHT SB - Contractor Test & Integration Type II/Top Owl	PO	TBS	C	0	69	2Q FY06	145	2Q FY06	255	2Q FY07	59	528	0
JSGPM													
OTHT SB - Plan and Conduct Developmental Testing of JSGPM System	MIPR	ATEC, Falls Church VA; DTC; HRED, APG, MD	U	3796	600	1Q FY05	0	NONE	0	NONE	0	4396	1250
OTE S - Plan and Conduct Operational Testing of JSGPM System	MIPR	Various	U	3312	500	1Q FY05	0	NONE	0	NONE	0	3812	8050

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PROT CLTH													
OTE S - Block II Glove Test	MIPR	Various	U	5040	2912	1Q FY05	0	NONE	0	NONE	0	7952	0
DTE S - JSLIST MPS Durability Trials	MIPR	Various	U	370	1452	1Q FY05	0	NONE	0	NONE	0	1822	0
OTE S - Protective Clothing OT&E	MIPR	Various	U	0	0	NONE	0	NONE	1250	2Q FY07	0	1250	0
OTE SB - Test Methodologies Modeling	MIPR	Various	U	0	0	NONE	0	NONE	1553	1Q FY07	0	1553	0
Subtotal III. Test and Evaluation:				16969	13133		5824		10562		4982	51470	

Remarks:

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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
PM/MS S - Overall Program Coordination	WR	NAWCAD, Patuxent River, MD	U	2330	300	1Q FY05	0	NONE	0	NONE	0	2630	2322
PM/MS SB - Air Force Program Coordination	MIPR	311 HSW Brooks AFB, TX	U	1095	100	1Q FY05	0	NONE	0	NONE	0	1195	1203
PM/MS SB - US Army Program Coordination	MIPR	PMSOLDIER, Ft. Belvoir, VA	U	343	100	1Q FY05	0	NONE	0	NONE	0	443	470
PM/MS SB - US Marine Corps Program Coordination	WR	MARCORSYSCOM, Quantico, VA	U	244	100	1Q FY05	0	NONE	0	NONE	0	344	344
JSAM													
PM/MS C - Program Management/Management Support	MIPR	Various	U	4261	2166	2Q FY05	3278	2Q FY06	3135	2Q FY07	3309	16149	2420
PM/MS S - Contractor Program Management	C/CPAF	AVOX, Lancaster, NY	C	2048	1551	2Q FY05	514	2Q FY06	72	2Q FY07	25	4210	1163
PM/MS S - Contractor Program Management	C/FPI	TBS	C	0	208	2Q FY06	440	2Q FY06	768	2Q FY07	179	1595	0
JSGPM													
PM/MS S - Program Management by Army (Lead Service)	MIPR	JPM - IP, Quantico, VA	U	2243	200	1Q FY05	0	NONE	0	NONE	0	2443	1400
PM/MS S - Program Management by Joint Services other than Army	MIPR	USN, USAF, USMC various locations	U	1600	250	1Q FY05	0	NONE	0	NONE	0	1850	1900
PROT CLTH													
PM/MS C - IPT	MIPR	Various	U	2652	300	1Q FY05	331	1Q FY06	0	NONE	0	3283	0

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PE NUMBER AND TITLE
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS C - Design/Analysis/Modeling	MIPR	Various		0	0	NONE	4727	1Q FY06	0	NONE	0	4727	0
PM/MS S - Protective Clothing	MIPR	Various	U	0	0	NONE	0	NONE	400	1Q FY07	0	400	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	193	NONE	0	NONE	0	193	0
Subtotal IV. Management Services:				16816	5275		9483		4375		3513	39462	

Remarks:

TOTAL PROJECT COST:	74493	27852		19724		19663		9494	151226	

Exhibit R-4a, Schedule Profile

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PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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D. Schedule Profile:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JPACE								
Pattern Finalization	>> — 4Q							
Developmental Test - Durability Testing	>> — 4Q							
Developmental Testing - Combined Developmental Testing (DT)/Operational Testing (OT) Assessment	>> — 4Q							
System Verification Review		1Q						
Milestone C - Low Rate Initial Production (LRIP)		2Q						
Independent Operational Testing		4Q	— 2Q					
MS C Full Rate Production (FRP) Decision			2Q					
JSAM								
System Demonstration and Development (SDD)	>> —	—	—	—	—	— 4Q		
Development Test Readiness Review (DTRR) Types I/IA		4Q	— 2Q					
Milestone C / Full Rate Production (FRP) Decision) - Type IA			2Q 3Q					
IOC Type I					1Q — 4Q			

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D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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 (Cont)								
Fixed Wing (FW, Type II) DTRR				4Q	2Q			
FW, Type II Milestone C					2Q 4Q			
JSGPM								
Conduct System Demonstration	>>	2Q						
Documentation for Developmental Testing (DT) and Operational Testing (OT) Test	>> 4Q							
Developmental Testing (DT) Production Qualification Testing (PQT)	3Q	2Q						
Initial Evaluation Report		1Q 2Q						
Prepare and Execute Log Spt Plan	>>	1Q						
Preparation of Milestone C Documentation	>>	1Q						
Limited User Test (LUT)	4Q	1Q						
Final Performance Specification	4Q							
Milestone C Low Rate Initial Production (LRIP) JSGPM		2Q						
Production Contract Award		3Q 4Q						
Material Release		2Q 4Q						

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JSGPM (Cont)																																
Full Rate Production (FRP) Review										2Q	3Q																					
Multiservices Operational Test and Evaluation (MOT&E) with Production Representative Articles											3Q																					
First Unit Equipped (FUE)/Initial Operational Capability (IOC)													1Q																			
PROT CLTH																																
JSLIST Block II Glove Conduct Developmental Test (DT)/Operational Test (OT)			3Q	—	—	—	—	—	1Q																							
JSLIST Block II Glove Milestone C												4Q																				
JSLIST Block II Glove MS C												4Q																				
JSLIST MPS - Milestone C	1Q																															
JSLIST MPS - Production Contract Award	1Q																															
JSLIST - Initial Operational Test and Evaluation (IOT&E) Alternative Footwear Solutions (AFS)							3Q	—	1Q																							
JSLIST- Milestone C AFS											3Q																					

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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PE NUMBER AND TITLE
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PROJECT
IP5

D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
Integrated Footwear System (IFS) DT/OT					1Q				1Q																							
JSLIST Spiral Development MS B										2Q																						
JSLIST Spiral Development DT										2Q				2Q																		
JSLIST Spiral Development MS C LRIP											3Q				3Q																	
JSLIST Spiral Development OT															3Q				3Q													
JSLIST Spiral Development MS C FRP																				4Q												

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PROJECT
IS5

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
IS5	INFORMATION SYSTEMS (SDD)	19884	73761	25838	17285	8812	5537	3274	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) and (3) Joint Warning and Reporting Network (JWARN).

The JEM will be JPEO-CBD's only accredited model for predicting hazards associated with the release of contaminants into the environment. JEM will be developed in blocks and will be capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents (Block I), high altitude releases, urban NBC environments (Block II), building interiors, and human performance degradation (Block III). Battlespace commanders and first responders must have an NBC hazard prediction capability in order to make decisions that will minimize risks of CBRN contamination and enable them to continue mission operations.

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PROJECT
IS5

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 I will support deliberate planning for operational and strategic users in a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) common operating environment (COE); Command and Control Personal Computers (C2PC); and crisis planning for the operational users in a COE.

The JWARN will provide standard integration and analysis of NBC detection information with Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (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 battlespace 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.

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PE NUMBER AND TITLE
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PROJECT
IS5

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
JOINT EFFECTS MODEL	7961	22196	1752
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 1554 JEM Block I - Continued the conduct of Independent Validation and Verification (IV&V). Prepared for and achieved Interim Class Accreditation.
- 4591 JEM Block I - Continued software development and initiated Government developmental testing. Finalized operational test plans. Provided program financial management, scheduling, planning and reporting.
- 1816 JEM Block I - Performed software maintenance in support of Developmental Testing (DT) and OT. Established the JPEO Software Support Activity (SSA).

Total 7961

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

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FY 2006 Planned Program:

- 2252 JEM Block I - Perform software maintenance through Limited Deployment Phase (LDP) IAW DoDI 5000.2.
- 2620 JEM Block I - Initiate long-term field trials, in conjunction with other programs, to obtain highly characterized CBRN dispersion patterns across the spectrum of operational scenarios critical to fill known data gaps.
- 3953 JEM Block I - Accomplish full system interoperability with JWARN. Complete interoperability, network and system security certifications on 12 different Service C4I/host Systems and two computer operating systems (Windows NT and Unix). Conduct Operational Assessments with the service operational test agencies (OTA). Prepare for independent operational test and evaluation.
- 3403 JEM Block I - Conduct MS C. Finalize Computer Based Training and courseware. Complete infrastructure and stand up of Software Support Activity and 24/7 capable Help Desk. Develop deployment plan for JEM software to include training.
- 1832 JEM Block I - Implement and certify the CBRN Database. Provide program financial management, scheduling, planning and reporting.
- 1476 JEM Block II - Revalidate Block II technology analysis from FY04 (See JEM portion of Project CA5), develop prototype options for down-select and prepare for Block II MS B.
- 5713 JEM Block II - Initiate and complete Block II system development and demonstration, incorporating Urban Missile Defense, Missile Intercept, Backtracking to Source, Strategic Command (STRATCOM) Support and Human Effects. Migrate Block II technologies into Block I design Urban Missile Defense, Missile Intercept, Backtrack to Source, STRATCOM Requirements, effects to 180 days, and a 10% improvement in speed and accuracy. Initiate IV&V.
- 947 JEM Block II - Initiate Pre-planned Product Improvement (P3I).

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PROJECT
IS5

FY 2006 Planned Program (Cont):
Total 22196

FY 2007 Planned Program:

- 1752 JEM Block I - Provide for software upgrades after initial system fielding. Provide program financial management, scheduling, planning and reporting. Continue initial system training. Support system-of-system testing with JWARN. Support requests for operation on special configurations North American Aerospace Defense Command (NORAD), Northern Command (NORTHCOM), Pentagon Force Protection Agency (PFPA), etc. Conduct independent operational test and evaluation.

Total 1752

	FY 2005	FY 2006	FY 2007
JOINT OPERATIONAL EFFECTS FEDERATION	0	13233	8188
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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PROJECT
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FY 2006 Planned Program:

- 2349 JOEF Block 1 - Continue deliberate and crisis planning for Seaports of Debarkation (SPOD), Aerial Ports of Debarkation (APOD) and automated Tactics, Techniques and Procedures (TTP) software development, including development of Common Operating Environment (COE) and Command and Control Personal Computer (C2PC) interfaces.
- 3277 JOEF Block 1- Initiate the development of mobile force capability to meet the Services' requirements.
- 1237 JOEF Block 1 - Continue the integration with JEM, JWARN and database management systems.
- 3801 JOEF Block 1 - Conduct software interoperability development and testing.
- 1846 JOEF Block 1 - Develop test, validation and verification plans, start Development Testing (DT) and begin software validation and verification.
- 287 JOEF Block 1 - Conduct Systems Engineering, Warfighter, T&E, and logistics IPTs.
- 436 JOEF Block 1 - Identify, collect and model pertinent data into the JOEF schema.

Total 13233

FY 2007 Planned Program:

- 4006 JOEF Block I - Complete software development for APODs, SPODs, automated TTPs and Mobile Force requirements, including COE and C2PC interfaces, for the Services for strategic level of war.
- 2167 JOEF Block I - Continue developmental testing and start operational testing.
- 642 JOEF Block I - Continue software validation and verification.

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BUDGET ACTIVITY
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PROJECT
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FY 2007 Planned Program (Cont):

- 324 JOEF Block I - Continue to conduct Systems Engineering, Warfighter, T&E, and logistics IPTs.
- 560 JOEF Block I - Continue development of training material.
- 489 JOEF Block I - Continue identification, collection and modeling of pertinent data into the JOEF schema.

Total 8188

	FY 2005	FY 2006	FY 2007
JOINT WARNING & REPORTING NETWORK (JWARN)	11923	37614	15898
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3225 JWARN - Continued Block II development.
- 2083 JWARN - Congressional Interest Item - Continued Block II development.
- 3413 JWARN - Completed Block II DT/OA planning.
- 3202 JWARN - Provided program management support and oversight.

Total 11923

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BUDGET ACTIVITY
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FY 2006 Planned Program:

- 7119 JWARN - Complete Block II development.
- 3975 JWARN - Conduct Block II Developmental Test (DT).
- 3508 JWARN - Conduct Block II Interoperability Tests (IOT).
- 4002 JWARN - Conduct Joint Component Interface Device (JCID) tests.
- 498 JWARN - Develop comprehensive DT test results and reports.
- 2891 JWARN - Conduct Multi-Service Operational Test & Evaluation (MOT&E) event planning.
- 2500 JWARN - Joint Component Interface Device (JCID) functionality - design & integration.
- 5600 JWARN - Stand alone variant development.
- 2102 JWARN - Network Centric Enterprise Services (NCES)/Net Ready (NR)/Key Performance Parameters (KPP) enhancements.
- 2419 JWARN - Continue program management and oversight.
- 2000 JWARN (T&E Capability) - Develop, design and integrate software and hardware for a functional Operational Test (OT) Stimulator demonstration system.
- 1000 JWARN (T&E Capability) - Develop a high bandwidth data transfer backbone to transmit and integrate test data for rapid analysis across multiple users and test sites.

Total 37614

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FY 2007 Planned Program:

- 527 JWARN - Generate comprehensive Operational Assessment (OA) report.
- 3879 JWARN - Conduct Block II OA.
- 940 JWARN - Conduct Milestone C review.
- 1883 JWARN - Coordinate JCID Low Rate Initial Production (LRIP).
- 1791 JWARN - Coordinate JCID First Article Test (FAT).
- 2260 JWARN - Conduct MOT&E event planning.
- 2528 JWARN - Continue program management and oversight.
- 1045 JWARN (T&E Capability) - Test and validate software and hardware for the Operational Test (OT) Stimulator demonstration system.
- 1045 JWARN (T&E Capability) - Integrate branched connections to the data transfer backbone to transmit and integrate test data for rapid analysis across multiple users and test sites.

Total 15898

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	718	0
RDT&E Articles (Quantity)	0	0	0

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FY 2006 Planned Program:

- 718 SBIR

Total 718

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	8809	5112	6544	21455	21570	22752	29033	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	994	1996	2058	1046	0	0	0	0	6094

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PROJECT
IS5

D. Acquisition Strategy:

JEM

The JEM program will use a three-block evolutionary acquisition approach for the design, development, testing and fielding of JEM. For Block I, upon completion of an Independent Model Analysis, JEM interface, credibility and performance requirements will be refined in an iterative process through a series of design reviews, using cost-effective graphical storyboarding prior to actual implementation of the algorithms and data harvested from the legacy Chemical, Biological, Radiological and Nuclear (CBRN) models. A cost-plus award/incentive fee contract is being used for Block I model development.

JOEF

JOEF is a planning tool to support deliberate and crisis planning. JOEF will be a near real-time course of action analysis tool developed in three increments. It will use a detailed CBRN hazard prediction model. Each block 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 I will support deliberate planning for operational and strategic users in a Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) common operating environment (COE)/Networked environment, Command and Control Personal Computers (C2PC), and crisis planning for the operational users in a COE/Networked environment.

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Increment II will support deliberate and crisis planning for the tactical users in COE/Networked, and Non-Networked environments; deliberate planning for operational and strategic users in a Non-Networked environment; crisis planning for the operational users in a Non-Networked environment, and crisis planning for the strategic users in a COE Networked and Non-Networked environments. Increment II also supports planning for consequence management and development of consequence management for military capabilities.

Increment III will extend consequence management capabilities to include civilian facilities.

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JWARN

The 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 through the concurrent integration of sensor connectivity initially planned for Block III. The revised strategy eliminates the Block II Milestone Decision process as well as Block II Development Testing/Operational Assessment (DT/OA). This shortens the delivery schedule for the full capability of JWARN by approximately 12 months.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
SW SB - Block II Software	C/CPIF	TBS	C	0	0	NONE	7017	2Q FY06	0	NONE	1874	8891	0
SW SB - JEM Hazard Prediction Model	C/CPIF	Innovative Emergency Management (IEM), Baton Rouge, LA	C	0	144	2Q FY05	998	2Q FY06	0	NONE	650	1792	0
SW SB - JEM Hazard Prediction Model	C/CPIF	TBS	C	0	0	NONE	0	NONE	598	2Q FY07	0	598	0
SW SB - JEM Hazard Prediction Model	C/CPIF	Northrop Grumman, San Diego, CA	C	0	1953	1Q FY05	2252	2Q FY06	0	NONE	0	4205	0
JOEF													
SW S - Engineering Builds - Development, Design, Coding	C/CPIF	TBS	C	0	0	NONE	8172	2Q FY06	2960	2Q FY07	0	11132	0
SW S - Integration & Interoperability	C/CPIF	TBS	U	0	0	NONE	1076	2Q FY06	0	NONE	0	1076	0
JWARN													
SW S - JWARN System Development and Demonstration	C/FPI	Northrop Grumman - Winterpark, FL	C	0	5308	3Q FY05	24214	2Q FY06	0	NONE	0	29522	0
Subtotal I. Product Development:				0	7405		43729		3558		2524	57216	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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PROJECT
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
ES S - IPT - System Engineering, Logistics and Program Support	MIPR	Various	U	0	2734	2Q FY05	4550	2Q FY06	202	2Q FY07	695	8181	0
ES S - JEM Data Model	MIPR	Various	U	0	0	NONE	2129	2Q FY06	0	NONE	0	2129	0
JOEF													
TD/D SB - Integration, System Engineering, Test and Logistics	MIPR	Various	U	0	0	NONE	1438	2Q FY06	1819	2Q FY07	0	3257	0
Subtotal II. Support Costs:				0	2734		8117		2021		695	13567	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
DTE S - Hazard Prediction Model Developmental Test	MIPR	Various	U	0	1372	2Q FY05	2822	2Q FY06	139	1Q FY07	650	4983	0
OTE S - Hazard Prediction Model Developmental Test	MIPR	Various	U	0	209	2Q FY05	938	2Q FY06	131	2Q FY07	555	1833	0
OTHT S - Hazard Prediction Model - IV&V	MIPR	Various	C	0	623	1Q FY05	598	2Q FY06	63	2Q FY07	39	1323	0
JOEF													
DTE S - Developmental Test Planning	MIPR	Various	U	0	0	NONE	1383	2Q FY06	1619	2Q FY07	0	3002	0
OTHT S - JOEF Independent Verification and Validation	MIPR	Various	U	0	0	NONE	225	2Q FY06	481	2Q FY07	0	706	0
JWARN													
OTHT SB - JWARN Block II Development Test	MIPR	Various	U	0	3413	3Q FY05	9974	1Q FY06	12253	1Q FY07	0	25640	0
Subtotal III. Test and Evaluation:				0	5617		15940		14686		1244	37487	

Remarks:

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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	0	926	1Q FY05	892	1Q FY06	619	1Q FY07	100	2537	0
JOEF													
PM/MS S - Program Office - Planning and Programming	MIPR	Various	U	0	0	NONE	939	1Q FY06	1309	1Q FY07	0	2248	0
JWARN													
PM/MS S - JWARN Management Support	MIPR	Various	U	0	3202	3Q FY05	3426	1Q FY06	3645	1Q FY07	0	10273	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	718	NONE	0	NONE	0	718	0
Subtotal IV. Management Services:				0	4128		5975		5573		100	15776	

Remarks:

TOTAL PROJECT COST:	0	19884		73761		25838		4563	124046	

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PROJECT
IS5

D. Schedule Profile:

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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																																
BLK I - Software Development	>>	—	—	—	—	—	—	—	—	2Q																						
BLK I - Devel Test (DT) (Contr)					1Q	—	—	—	1Q																							
BLK I - DT (Government)						2Q	—	—	—	2Q																						
BLK I - Software Maintenance							3Q	—	—	—	—	4Q																				
BLK I - Establish, Train, Stand Up Software Support Activity							3Q	—	—	—	3Q																					
BLK I - Operational Testing (OT)										2Q	3Q																					
BLK I - M/S C (Lim Deploy) and Full Rate Production											3Q	4Q																				
BLK I - Production and Deployment												4Q	—	—	—	—	—	2Q														
BLK I - Initial Operational Capability (IOC)												4Q	1Q																			
JOEF																																
Concept and Technology Development Phase	>>	—	—	—	—	—	—	—	1Q																							
Prototype Development		2Q	—	—	—	—	—	—	1Q																							

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
Focused Technology Assessment II (Mobile Forces)			3Q	4Q																												
Focused Technology Assessment III (Mobile Forces & Bus. Process Mgt. Models)							3Q	—	1Q																							
Increment I - Milestone B									1Q																							
Incr I - Award Systems Development and Demonstration (SDD) Contract									1Q	2Q																						
Incr I - Software Development									1Q	—	—	—	—	—	3Q																	
Incr I - Tech Reviews									1Q	—	—	—	—	—	—	—	1Q															
Incr 1 - Developmental Testing (DT) Build 1													1Q																			
Incr I - Operational Assessment															3Q																	
Incr I - Developmental Testing (DT) Build 2															3Q																	
Incr I - Integrated Operational Test & Evaluation (IOTE)																	1Q															
Incr I - Milestone C (Limited Deployment)																				4Q												

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
Incr I - Initial Operational Capability (IOC)																				4Q												
Incr 1 - Full Operational Capability																								4Q								
JWARN																																
JWARN BLK II - System Design and Development (SDD) Performance	>>	—	—	—	—	—	—	—	—	2Q																						
JWARN BLK II - JIC Deployment	>>	—	—	—	—	—	—	—	—	2Q																						
JWARN BLK II - JCID Design and Development	>>	—	—	—	—	—	—	—	—	2Q																						
JWARN BLK II - Development Test											3Q	4Q																				
JWARN BLK II - Operational Assessment												4Q	—	2Q																		
JWARN BLK II - Milestone C														2Q	3Q																	
JWARN BLK II - JCID Low Rate Initial Production (LRIP) Contract Award															3Q	—	1Q															
JWARN BLK II - First Article Test															3Q	4Q																
JWARN BLK II - Initial Operational Test and Evaluation (IOT&E)																	1Q	2Q														

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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 BLK II - Multiservice Operational Test & Evaluation																	1Q	2Q														
JWARN BLK II - Full Rate Production Milestone Decision																				4Q												
JWARN BLK II - Full Rate Production																				4Q												4Q
JWARN BLK II - Full Operational Capability																										2Q						

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MB5	MEDICAL BIOLOGICAL DEFENSE (SDD)	9843	60612	71834	92533	95113	77377	181423	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, Plague, and Equine Encephalitis vaccines.

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PROJECT
MB5

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 through 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. The CRP is a consolidation of all antibody/select biological threat agent and genomic reference materials based on identification requirements within the BW detection program. Supported systems include the Biological Integrated Detection System (BIDS), Joint Biological Agent and Identification System (JBAIDS) Increments I and II, and the Joint Biological Point Detection System (JBPDS) Increments I and II. 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.

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. Increments II and III technologies will be selected based on their reliability, technological maturity, and supportability.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
CRITICAL REAGENTS PROGRAM	2939	8486	3204
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 762 CRP - Continued development of antibodies to International Task Force (ITF)-6B agents.
- 1483 CRP - Continued expansion of select biological threat agent reference materials and validation of assays.
- 694 CRP - Initiated development of ECL immunoassays and PCR genomic assays to ITF-6B (ITF-6A completed in FY04).

Total 2939

FY 2006 Planned Program:

- 2179 CRP - Continue development of antibodies, PCR genomic assays and ECL immunoassays to ITF-6B.
- 3447 CRP - Continue expansion of select biological threat agent reference materials and validation of assays.
- 1597 CRP - Implement a formal Quality Assurance/Quality Control (QA/QC) medical and non-medical, validation, Developmental Testing (DT), and Operational Testing (OT) program to encompass the transition and fielding of biological detection assays.
- 873 CRP - Initiate development of ECL immunoassays and PCR genomic assays to ITF-6C agents.
- 390 CRP - Initiate expansion of unified culture collection (UCC).

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BUDGET ACTIVITY
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BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
MB5

FY 2006 Planned Program (Cont):
Total 8486

FY 2007 Planned Program:

- 1103 CRP - Continue expansion of select biological threat agent reference materials, validation of assays, and UCC.
- 1194 CRP - Continue antibody development of ITF-6B. Continue ECL immunoassays and PCR genomic assays development of ITF-6B and ITF-6C agents.
- 907 CRP - Initiate International Organization for Standardization (ISO) 17025 into antibody production.

Total 3204

	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM	4474	0	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 3070 JBAIDS Increment I - Completed Developmental Testing (DT), hardware Engineering Change Proposal (ECP) process and upgrading, and BW assay development. Initiated and completed OT. Achieved Milestone C/Low Rate Initial Production (LRIP).
- 560 JBAIDS Increment I - Conducted New Equipment Training (NET) of systems.

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PROJECT
MB5

FY 2005 Accomplishments (Cont):

- 844 JBAIDS Increment I - Conducted FDA clinical trials and submitted FDA 510(k) for detection of Anthrax.

Total 4474

	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM INCREMENT II	0	8119	10198
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 137 JBAIDS Increment II - Complete down select process to determine commercial-off-the-shelf (COTS)/Non-Developmental Items (NDI) systems' potential applicability; and source selection activities, technical specification development, and support activities.
- 4996 JBAIDS Increment II - Purchase development prototype articles, perform contractor verification testing (CVT), develop technical manuals and test plans/procedures, provide contractor logistics support, and perform FDA 510(k) activities. Achieve Milestone B.
- 1551 JBAIDS Increment II - Initiate Government Developmental Testing (DT), Operational Assessment (OA), Operational Testing (OT), and system training development efforts.
- 843 JBAIDS Increment II - Initiate Government Furnished Material (GFM) manufacturing support of toxin test sample manufacturing.

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PROJECT
MB5

FY 2006 Planned Program (Cont):

- 592 JBAIDS Increment II - Initiate and complete toxin Food and Drug Administration (FDA) interface planning efforts to determine pre-marketing approval (PMA)/510(k) applicability.

Total 8119

FY 2007 Planned Program:

- 448 JBAIDS Increment II - Complete GFM manufacturing support of toxin test sample manufacturing.
- 7092 JBAIDS Increment II - Continue to perform CVT, develop technical manuals and test plans/procedures, provide contractor logistics support, and perform FDA 510(k) activities.
- 2145 JBAIDS Increment II - Continue Government DT, OA, OT, and system training development efforts.
- 513 JBAIDS Increment II - Initiate FDA toxin 510(k) submittals and clinical trials.

Total 10198

	FY 2005	FY 2006	FY 2007
BOTULINUM VACCINE	0	26083	18583
RDT&E Articles (Quantity)	0	0	0

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

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BUDGET ACTIVITY
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PROJECT
MB5

FY 2006 Planned Program:

- 1736 JVAP - Recombinant Botulinum Vaccine - Continue stability studies on drug product.
- 3859 JVAP - Recombinant Botulinum Vaccine - Continue manufacturing process validation and validation of formulation, fill, and finish process for serotype A.
- 3657 JVAP - Recombinant Botulinum Vaccine - Continue manufacturing process validation and initiate validation of formulation, fill, and finish process for serotype B.
- 13331 JVAP - Recombinant Botulinum Vaccine - Initiate planning for Phase 2a clinical study.
- 3500 JVAP - Recombinant Botulinum Vaccine - Continue Phase 1b clinical study.

Total 26083

FY 2007 Planned Program:

- 15216 JVAP - Recombinant Botulinum Vaccine - Initiate Phase 2 Clinical Trial.
- 3367 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and stability testing. Complete non-human primate immunogenicity study and continue animal model development efforts.

Total 18583

	FY 2005	FY 2006	FY 2007
ENCEPHALITIS VACCINE	0	4877	0
RDT&E Articles (Quantity)	0	0	0

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PROJECT
MB5

FY 2006 Planned Program:

- 4877 JVAP - Equine Encephalitis Vaccine - Initiate passive transfer studies with samples from the Phase 1 clinical trial.

Total 4877

	FY 2005	FY 2006	FY 2007
PLAGUE VACCINE	0	10028	39849
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 9138 JVAP - Plague Vaccine - Initiate Phase 2 clinical trial of US candidate.
- 341 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate.
- 549 JVAP - Plague Vaccine - Continue full-scale manufacturing process development of US candidate. This includes initiating analytical methods validation.

Total 10028

FY 2007 Planned Program:

- 3051 JVAP - Plague Vaccine - Continue Phase 2 clinical trial of US candidate.
- 4964 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate.

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PROJECT
MB5

FY 2007 Planned Program (Cont):

- 1049 JVAP - Plague Vaccine - Continue stability testing of US candidate.
- 10641 JVAP - Plague Vaccine - Complete full-scale manufacturing process development of US candidate and complete analytical methods validation.
- 20144 JVAP - Plague Vaccine - Complete manufacturing process validation.

Total 39849

	FY 2005	FY 2006	FY 2007
BIOLOGICAL VACCINES	2430	2426	0
RDT&E Articles (Quantity)	0	0	0

FY 2005 Accomplishments:

- 2430 Congressional Interest Item - Conducted ParalellaVax Rapid Vaccine Testing Technology study.

Total 2430

FY 2006 Planned Program:

- 2426 TT Bio - Congressional Interest Item - ParalellaVax Rapid Vaccine Testing Technology.

Total 2426

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PROJECT
MB5

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	593	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 593 SBIR

Total 593

C. Other Program Funding Summary:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JM0001 JOINT BIO AGENT IDENTIFICATION AND DIAGNOSTIC SYS (JBAIDS)	18372	20904	5732	14907	11328	8605	0	0	79848
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	80417	38409	39074	14451	42421	41808	31807	Cont	Cont
JX0210 CRITICAL REAGENTS PROGRAM (CRP)	1841	2192	2307	2385	2414	2625	2738	Cont	Cont

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PROJECT
MB5

D. Acquisition Strategy:

CRP

The Critical Reagents Program (CRP) is executed using a stepwise strategy. After successful end item scale-up, items are transitioned to full-scale production in support of the detection platforms. Reagents have been developed to meet baseline project management requirements such as Biological Integrated Detection System (BIDS), Airbase/Port Biological Detection (Portal Shield), Joint Biological Agent Identification and Diagnostic System (JBAIDS), and JBPDS. Performance improvements in those reagents must be pursued. A large portion of the FY06-09 development activity will focus on antibody and immunoassay development against JBAIDS and JBPDS Block II requirements. This includes roughly tripling the inventory of agents that can be detected using antibody based methods. The antibody components of the critical reagents are Government Furnished Equipment (GFE) to the HHA and ECL immunoassay manufacturer. The CRP also seeks to improve the performance and producibility of the current reagent inventory through a program-wide testing and science and technology (S&T) transition strategy with the end goal of horizontally integrated reagent improvements. Expansion of select biological threat agent and genomic reference materials in support of ongoing detection reagent validation will be a major focus between FY06 and FY10. In FY06, the CRP will implement a formal DoD validation for DoD medical and non-medical assays.

JBAIDS

JBAIDS is an evolutionary development program. Increment I 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 I 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.

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JBAIDS II

JBAIDS is an evolutionary development program. Increment II will be a rapid development and fielding effort to deliver critical capability to identify toxins to the field in the shortest time. Increment II development effort focuses on militarizing and hardening of critical toxin identification technologies based on a commercial off-the-shelf (COTS)/Non-Developmental Item (NDI) candidate system. The four-phase down selection process includes a competitive fly-off of candidate toxin identification technologies in 4Q FY05, and source selection efforts in 2Q FY06.

VAC BOT

A prime systems contractor will function as the "responsible head" and license holder and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports development through FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. The other serotypes will be added as evolutionary upgrades when funding is available.

The management lead for the program shifts 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).

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During the System Development and Demonstration phase (SDD), the JVAP 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.

JVAP has developed a risk mitigation plan to carry both United Kingdom (UK) and US candidates through an event driven down-select decision point. The UK plague vaccine candidate is being developed through a Project Arrangement (PA) among the US, UK and Canada.

VAC ENC

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 initial development through FDA licensure.

The management lead for the program shifts 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 (Phase 1).

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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During the System Development and Demonstration phase (SDD), the JVAP 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 ranging and scheduling.

VAC PLG

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 initial development through FDA licensure.

The management lead for the program shifts 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 (Phase 1).

During the System Development and Demonstration phase (SDD), the JVAP 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 period to provide additional safety data and determine dose and schedule of vaccinations and Phase 3 clinical trials are initiated.

After a successful Milestone C, the program will enter the production and deployment phase. A low rate initial production decision (LRIP) will be held to authorize production of vaccine to support initial operational capability (IOC). The BLA will be submitted and FDA licensure (IOC) will be obtained during this phase. IOC is defined as FDA licensure plus 1/x Troop Equivalent Dose (TED) stockpile with x being the shelf life in years.

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JVAP has developed a risk mitigation plan to carry both United Kingdom (UK) and US candidates through an event driven down-select decision point. The UK plague vaccine candidate is being developed through a Project Arrangement (PA) under provisions of the Chemical, Biological, Radiological Memorandum of Understanding among the US, UK and Canada.

VACCINES

Upon FDA licensure, these vaccines and related biologics are procured as commercial-off-the-shelf (COTS) products.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	803	675	1Q FY05	2429	2Q FY06	1035	2Q FY07	0	4942	0
CRP - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Naval Medical Research Center, Silver Spring, MD	U	205	205	1Q FY05	1002	2Q FY06	205	2Q FY07	0	1617	0
JBAIDS													
SW SB - JBAIDS Inc I - Assay Development	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	9252	330	1Q FY05	0	NONE	0	NONE	0	9582	0
JBAIDS II													
HW/SW C - JBAIDS Inc II - Development Prototype Article Production	C/CPFF	TBS	C	0	0	NONE	3282	3Q FY06	6878	1Q FY07	0	10160	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	0	NONE	8610	1Q FY06	5893	1Q FY07	0	14503	0
VAC ENC													
HW S - Vaccine Development - Completion of Phase 1 clinical trial	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	2000	1Q FY06	0	NONE	0	2000	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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PROJECT
MB5

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC PLG													
HW S - Includes validation and consistency lot production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	3191	1Q FY06	16216	1Q FY07	0	19407	0
VACCINES													
HW S - ParallelaVax Rapid Vaccine Testing Technology	SS/CPFF	Maxygen, Inc., Redwood City, CA	C	0	972	4Q FY05	0	NONE	0	NONE	0	972	0
TT Bio - ParallelaVax Rapid Vaccine Testing	SS/CPFF	TBS	C	0	0	NONE	2426	4Q FY06	0	NONE	0	2426	0
Subtotal I. Product Development:				10260	2182		22940		30227		0	65609	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

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PROJECT
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	217	500	2Q FY05	611	2Q FY06	720	2Q FY07	0	2048	0
CRP - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground, Dugway, UT	U	0	238	2Q FY05	385	2Q FY06	350	2Q FY07	0	973	0
CRP - Select Biological Threat Agent Reference Material Development	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	404	2Q FY05	290	2Q FY06	0	NONE	0	694	0
JBAIDS													
TD/D SB - JBAIDS Inc I - Joint Services Training	MIPR	AMEDD, Fort Sam Houston, TX	U	310	649	1Q FY05	0	NONE	0	NONE	0	959	0
TD/D SB - JBAIDS Inc I - Government Labs Support	MIPR	AFIOH, AFIP, NSWC, and DPG	U	612	540	2Q FY05	0	NONE	0	NONE	0	1152	0
TD/D SB - JBAIDS Inc I - 510(k) Package, Test Plans, Technical Data/Manuals, Assay Patents	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	1119	128	1Q FY05	0	NONE	0	NONE	0	1247	0
TD/D SB - JBAIDS Inc I - US Navy IOT&E	C/CPFF	Booz Allen Hamilton, McLean, VA	C	0	129	2Q FY05	0	NONE	0	NONE	0	129	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS II													
TD/D C - JBAIDS Inc II - Government Labs/Regulatory Support	MIPR	Dugway Proving Ground, DPG, UT	U	0	0	NONE	683	2Q FY06	218	2Q FY07	0	901	0
TD/D C - JBAIDS Inc II - Government Labs/Regulatory Support	MIPR	TBS (Various)	U	0	0	NONE	306	3Q FY06	213	3Q FY07	0	519	0
TD/D C - JBAIDS Inc II - FDA, 510(k) Package, Test Plans, and Technical Data Manuals	C/CPFF	TBS	C	0	0	NONE	121	3Q FY06	287	3Q FY07	0	408	0
TD/D C - JBAIDS Inc II - Training Efforts	MIPR	AMEDD Center & School, Ft. Sam Houston, TX	U	0	0	NONE	200	2Q FY06	273	2Q FY07	0	473	0
TD/D C - JBAIDS Inc II - Down Select and Source Selection Activities	MIPR	TBS (Various)	U	0	0	NONE	99	2Q FY06	0	NONE	0	99	0
VAC BOT													
TD/D S - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	4100	1Q FY06	2788	1Q FY07	0	6888	0

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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC ENC													
TD/D S - Includes Regulatory Integration (Environmental and FDA Documentation)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	750	1Q FY06	0	NONE	0	750	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	0	0	NONE	1520	1Q FY06	6081	1Q FY07	0	7601	0
VACCINES													
TD/D SB - ParallelaVax Rapid Vaccine Testing Technology	C/CPFF	Maxygen, Inc., Redwood City, CA	C	0	365	4Q FY05	0	NONE	0	NONE	0	365	0
Subtotal II. Support Costs:				2258	2953		9065		10930		0	25206	

Remarks:

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	264	374	1Q FY05	1017	1Q FY06	446	1Q FY07	0	2101	0
CRP - Test & Evaluation of Select Biological Threat Agent Reference Materials, Assays & UCC	MIPR	USAMRIID, Frederick, MD	U	155	132	1Q FY05	761	3Q FY06	116	2Q FY07	0	1164	0
CRP - Test & Evaluation of Select Biological Threat Agent Reference Materials and Assays	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	296	214	1Q FY05	794	1Q FY06	0	NONE	0	1304	0
JBAIDS													
OTHT SB - JBAIDS Inc I - Conduct DT, OT, IOT&E	MIPR	AFIOH, Brooks City Base, TX	U	1183	373	1Q FY05	0	NONE	0	NONE	0	1556	0
DTE SB - JBAIDS Inc I - Conduct OA & OT	MIPR	AFOTEC, Kirtland AFB, NM	U	1111	1484	1Q FY05	0	NONE	0	NONE	0	2595	0
DTE SB - JBAIDS Inc I - Assay and Protocol Testing	MIPR	Dugway Proving Ground, UT	U	778	277	1Q FY05	0	NONE	0	NONE	0	1055	0
DTE C - JBAIDS Inc I - Conduct DT and OT	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	0	167	1Q FY05	0	NONE	0	NONE	0	167	0
JBAIDS II													
DTE C - JBAIDS Inc II - Conduct DT, OA, OT, and Clinical Trials	MIPR	TBS (Various)	U	0	0	NONE	2500	2Q FY06	1191	3Q FY07	0	3691	0

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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
OTHT S - Testing, evaluation and clinical trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	10109	1Q FY06	7063	1Q FY07	0	17172	0
VAC ENC													
OTHT S - Testing, evaluation, and clinical trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	1448	1Q FY06	0	NONE	0	1448	0
VAC PLG													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	3743	1Q FY06	12162	1Q FY07	0	15905	0
VACCINES													
OTHT S - ParallelaVax Rapid Vaccine Testing Technology	SS/CPFF	Maxygen, Inc., Redwood City, CA	C	0	729	4Q FY05	0	NONE	0	NONE	0	729	0
Subtotal III. Test and Evaluation:				3787	3750		20372		20978		0	48887	

Remarks:

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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	0	0	NONE	769	1Q FY06	172	1Q FY07	0	941	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	187	104	4Q FY05	257	4Q FY06	96	4Q FY07	0	644	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	63	93	4Q FY05	171	4Q FY06	64	4Q FY07	0	391	0
JBAIDS													
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	38	91	1Q FY05	0	NONE	0	NONE	0	129	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	2249	53	1Q FY05	0	NONE	0	NONE	0	2302	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	177	159	4Q FY05	0	NONE	0	NONE	0	336	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	178	94	4Q FY05	0	NONE	0	NONE	0	272	0
JBAIDS II													
PM/MS S - JBAIDS Inc II - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	248	1Q FY06	232	1Q FY07	0	480	0
PM/MS S - JBAIDS Inc II - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	164	4Q FY06	204	4Q FY07	0	368	0
PM/MS S - JBAIDS Inc II - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	516	4Q FY06	702	4Q FY07	0	1218	0

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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	0	NONE	380	4Q FY06	372	4Q FY07	0	752	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	570	4Q FY06	558	4Q FY07	0	1128	0
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	972	1Q FY06	608	1Q FY07	0	1580	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	1342	1Q FY06	1301	1Q FY07	0	2643	0
VAC ENC													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	0	NONE	90	4Q FY06	0	NONE	0	90	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	135	4Q FY06	0	NONE	0	135	0
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	154	1Q FY06	0	NONE	0	154	0

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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	0	NONE	300	1Q FY06	0	NONE	0	300	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	0	NONE	203	4Q FY06	1216	4Q FY07	0	1419	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	304	4Q FY06	912	4Q FY07	0	1216	0
PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	358	1Q FY06	2350	1Q FY07	0	2708	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	709	3Q FY06	912	3Q FY07	0	1621	0
VACCINES													
PM/MS S - ParallelaVax Rapid Vaccine Testing Technology	SS/CPFF	Maxygen, Inc., Redwood City, CA	C	0	364	4Q FY05	0	NONE	0	NONE	0	364	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	593	NONE	0	NONE	0	593	0

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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:				2892	958		8235		9699		0	21784	

Remarks:

TOTAL PROJECT COST:				19197	9843		60612		71834		0	161486	

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D. Schedule Profile:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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 - Select Biological Threat Agent Reference Material Efforts to ITF-6A and ITF-6B	>>				2Q			
CRP - Antibody Development of ITF-6B Agents	>>				2Q			
CRP - Development of ECL Immunoassays and PCR Genomic Assays to ITF-6A, ITF-6B and ITF-6C Agents	1Q				1Q			
CRP - Unified Culture Collection (UCC) Expansion			2Q			2Q		
CRP - Formal QA/QC, Validation, DT, & OT Implementation			3Q 4Q					
CRP - Integrate ISO 17025 into Antibody Production				1Q	4Q			
CRP - ECL Immunoassay and PCR Genomic Assay Validation				2Q		3Q		
JBAIDS								

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D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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
JBAIDS (Cont)																																
JBAIDS Increment I - Procure Systems for Engineering Design Test (EDT)/Developmental Test (DT)	>>	2Q																														
JBAIDS Increment I - EDT, DT, Qualification Testing, and Assay Development		2Q	—	—	—	—	—	4Q																								
JBAIDS Increment I - Conduct OA				4Q																												
JBAIDS Increment I - Milestone C/Low Rate Initial Production (LRIP) Decision					1Q																											
JBAIDS Increment I - Conduct FDA Clinical Trials and Submit 510(k) for Anthrax					1Q	—	—	—	1Q																							
JBAIDS Increment I - Initial Operational Test & Evaluation								4Q																								
JBAIDS Increment I - Full Rate Production (FRP) Decision										2Q																						
JBAIDS II																																
JBAIDS Increment II - Milestone B											3Q																					

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D. Schedule Profile (cont):

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
JBAIDS II (Cont)								
JBAIDS Increment II - Developmental Testing (DT), Operational Assessment (OA), and Operational Testing (OT)			4Q	1Q				
JBAIDS Increment II - FDA Toxin 510(k) Submittal and Clinical Trials				3Q	3Q			
JBAIDS Increment II - FDA Clearance (5 Toxins)				3Q		4Q		
JBAIDS Increment II - Milestone C (LRIP)					1Q			
JBAIDS Increment II - Full Rate Production (FRP) Decision					2Q			
VAC BOT								
Non-Clinical Testing	>>						3Q	
Manufacturing Process Development	>>			1Q				
Phase 1 Clinical Trial (A/B)	3Q					2Q		
Phase 2 Clinical Trial (A/B)				2Q				3Q
Milestone B					1Q			
Consistency Lot Production					4Q	2Q		

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D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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)																																
Phase 3 Clinical Trial (A/B)																											3Q					4Q
VAC ENC																																
Passive Transfer Studies										2Q																				1Q		
VEE Milestone B															3Q																	
Phase 3 Clinical Trial																									1Q							4Q
Consistency Lot Manufacture																									1Q						3Q	
VAC PLG																																
Non-Clinical Studies	>>																											4Q				
Manufacturing Process Development				4Q											3Q																	
PLG Milestone B										2Q																						
Phase 2 Clinical Trial										2Q											1Q											
Consistency Lot Production																		2Q			1Q											
Phase 3 Clinical Trial																				4Q							3Q					
Milestone C																								4Q								
Biological Licensure Application (BLA) Submission																											3Q					
FDA Licensure/IOC																														2Q		

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COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MC5	MEDICAL CHEMICAL DEFENSE (SDD)	1350	5029	6417	38151	29405	14025	11702	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, Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERA), which is a topical skin protectant, and Antidote Treatment, Nerve Agent, Autoinjector (ATNAA), which is a multi-chambered autoinjector for delivery of atropine and an oxime; and (2) Advanced Anticonvulsant System (AAS), which will be used as a treatment for seizures from exposure to nerve agents.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
ADVANCED ANTICONVULSANT SYSTEM	0	2574	6417
RDT&E Articles (Quantity)	0	0	0

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FY 2006 Planned Program:

- 2574 AAS - Continue process development and current Good Manufacturing Practices (cGMP) requirements.

Total 2574

FY 2007 Planned Program:

- 3064 AAS - Continue process development and cGMP requirements.
- 2088 AAS - Initiate Phase 2 clinical safety study (expanded safety study). Achieve Milestone B.
- 456 AAS - Initiate GLP animal efficacy studies.
- 570 AAS - Initiate new formulation toxicology and stability studies.
- 239 AAS - Initiate Developmental Testing/Operational Testing (DT/OT) of packaging.

Total 6417

	FY 2005	FY 2006	FY 2007
MEDICAL CHEMICAL DEFENSE	1350	0	0
RDT&E Articles (Quantity)	0	0	0

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FY 2005 Accomplishments:

- 174 SERPACWA - Completed FDA manufacturing requirements, redesign of packaging for field durability, and shelf-life monitoring.
- 68 SERPACWA - Continued FDA required post-marketing studies (including compatibility study with M291).
- 522 ATNAA - Completed fifth-year shelf-life studies and FDA required post-marketing studies.
- 586 SNAPP - Continued FDA required post-approval studies.

Total 1350

	FY 2005	FY 2006	FY 2007
PHARMACEUTICAL POST APPROVAL & DEVELOPMENT SUPPORT	0	2405	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 1633 SNAPP - Complete FDA required post-approval studies.
- 772 SERPACWA - Complete FDA required post-marketing studies (including compatibility study with M291).

Total 2405

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	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	50	0
RDT&E Articles (Quantity)	0	0	0

FY 2006 Planned Program:

- 50 SBIR

Total 50

C. Other Program Funding Summary: N/A

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D. Acquisition Strategy:

AAS

Medical Identification and Treatment Systems (MITS) 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 studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the systems 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.

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

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MC5

BSCAV

Bioscavenger is a developmental program with three distinct increments. Increment I is based on butyrylcholinesterase purified from human plasma, i.e., plasma-derived Bioscavenger or pBioscavenger. Medical Identification and Treatment Systems (MITS) 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 II will initially look at two different technologies that bind and sequester nerve agents. The down-selection to one of the two technologies will be made during the source selection process or following the Phase 1 clinical trial. Medical Identification and Treatment Systems (MITS) will exercise management oversight and a commercial partner(s) will serve as the system integrator during the Technology Development Phase that includes pre-clinical animal studies and Phase 1 human clinical safety studies. If contracts are awarded for both technologies, there will be a down-selection to one Bioscavenger Increment II candidate at the Milestone B. After Milestone B, during the System Development and Demonstration Phase, MITS will continue to exercise management oversight and the commercial partner will serve as the systems 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.

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

DATE
February 2006

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) 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 studies. After Milestone B, during the System Development and Demonstration Phase, MITS and/or a commercial partner (product dependent) will serve as the systems 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.

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

PPADS

Medical Identification and Treatment Systems (MITS) 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 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - cGMP Manufacturing Requirements	C/CPIF	TBS	C	0	0	NONE	1954	4Q FY06	2567	2Q FY07	0	4521	0
MEDCHEM													
SERPACWA - Manufacturing and Shelf-Life Monitoring	C/FFP	Fisher BioServices, Rockville, MD	C	614	82	1Q FY05	0	NONE	0	NONE	0	696	0
Subtotal I. Product Development:				614	82		1954		2567		0	5217	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - Regulatory Integration and NDA Support Efforts	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	0	NONE	0	NONE	837	2Q FY07	0	837	0
AAS - Regulatory Integration, NDA Support Efforts	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	0	NONE	48	2Q FY07	0	48	0
MEDCHEM													
ATNAA & SERPACWA - FDA Regulatory Requirements	MIPR	USAMMDA, Fort Detrick, MD	U	220	14	1Q FY05	0	NONE	0	NONE	0	234	0
SNAPP - NDA Approval and Post-Approval Requirements	MIPR	USAMMDA & USAMRAA, Fort Detrick, MD	U	198	145	2Q FY05	0	NONE	0	NONE	0	343	0
PPADS													
SNAPP - FDA Post-Approval Requirements	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	123	3Q FY06	0	NONE	0	123	0
SERPACWA - FDA Post-Marketing Requirements	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	58	2Q FY06	0	NONE	0	58	0
Subtotal II. Support Costs:				418	159		181		885		0	1643	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AAS													
AAS - GLP Animal Efficacy Studies	MIPR	USAMRICD, Edgewood, MD	U	0	0	NONE	0	NONE	324	2Q FY07	0	324	0
AAS - Phase 2 Clinical Safety Study	C/CPIF	TBS	C	0	0	NONE	0	NONE	1511	2Q FY07	0	1511	0
AAS - New Formulation Toxicology and Stability Studies	C/CPIF	TBS	C	0	0	NONE	0	NONE	327	1Q FY07	0	327	0
MEDCHEM													
SERPACWA - Durability Study	MIPR	Aberdeen Test Center (ATC), Edgewood, MD	U	102	38	3Q FY05	0	NONE	0	NONE	0	140	0
SERPACWA - FDA Required Post-Marketing Studies (Stability Testing)	C/FFP	Fisher BioServices, Rockville, MD	C	527	69	1Q FY05	0	NONE	0	NONE	0	596	0
ATNAA - Shelf-life Studies	MIPR	USAMMDA, Fort Detrick, MD	U	470	456	2Q FY05	0	NONE	0	NONE	0	926	0
SNAPP - FDA Required Post-Approval Studies	MIPR	USAMMDA, Fort Detrick, MD; USAMRICD, Edgewood, MD; WRAIR, SS, MD	U	1453	521	3Q FY05	0	NONE	0	NONE	0	1974	0
PPADS													
SNAPP - FDA Post-Marketing Requirements	MIPR	USMARICD, Edgewood, MD	U	0	0	NONE	1458	3Q FY06	0	NONE	0	1458	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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 - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SERPACWA - FDA Post-Marketing Requirements	MIPR	RDECOM, Edgewood, MD	U	0	0	NONE	400	2Q FY06	0	NONE	0	400	0
Subtotal III. Test and Evaluation:				2552	1084		1858		2162		0	7656	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 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	0	NONE	378	1Q FY06	482	1Q FY07	0	860	0
AAS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	52	4Q FY06	128	4Q FY07	0	180	0
AAS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	190	4Q FY06	193	4Q FY07	0	383	0
MEDCHEM													
Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	56	25	4Q FY05	0	NONE	0	NONE	0	81	0
PPADS													
PPADS - Program Management Support	MIPR	USAMMDA, Fort Detrick, MD	U	0	0	NONE	103	1Q FY06	0	NONE	0	103	0
PPADS - Program Management Support	SS/FFP	Goldbelt Raven, LLC, Frederick, MD	C	0	0	NONE	141	1Q FY06	0	NONE	0	141	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2006

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PPADS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	49	4Q FY06	0	NONE	0	49	0
PPADS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	73	4Q FY06	0	NONE	0	73	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	50	NONE	0	NONE	0	50	0
Subtotal IV. Management Services:				56	25		1036		803		0	1920	
Remarks:													
TOTAL PROJECT COST:				3640	1350		5029		6417		0	16436	

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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	>>	—	—	—	—	—	—	—	—	2Q																						
AAS - Investigational New Drug (IND) Application			3Q	—	—	—	—	—	—	2Q																						
AAS - Phase 1 Clinical Safety Study			3Q	—	—	—	—	—	—	—	—	4Q																				
AAS - cGMP Manufacturing Requirements								4Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1Q			
AAS - Milestone B													1Q																			
AAS - New Formulation Toxicology and Stability Studies													1Q	—	—	—	—	—	—	—	2Q											
AAS - Phase 2 Clinical Safety Study														2Q	—	—	—	—	—	—	—	—	—	—	1Q							
AAS - GLP Animal Efficacy Studies														2Q	—	—	—	—	—	—	—	—	—	4Q								
AAS - New Drug Application (NDA) Submission																											3Q					
AAS - MS C																																4Q
MEDCHEM																																
ATNAA - Shelf-life Extension/Stability Studies	>>	—	—	—	—	—	—	4Q																								

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	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
MEDCHEM (Cont)								
SNAPP - FDA Required Post-Approval Studies	>>			4Q				
SERPACWA - FDA Required Post-Marketing Studies	>>		4Q					
SERPACWA - FDA Manufacturing Requirements, Redesign of Packaging for Field Durability &Shelf-life Monitoring.	4Q	4Q						
PPADS								
SNAPP - FDA Required Post-Marketing Studies	>>		4Q					
SERPACWA - FDA Required Post-Marketing Studies	>>		4Q					

BUDGET ACTIVITY 6
RDT&E MGT SUPPORT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Budget Activity (BA) Cost		49645	81494	80134	80335	83958	78156	79784	Continuing	Continuing
0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	43785	81494	80134	80335	83958	78156	79784	Continuing	Continuing
0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5860	0	0	0	0	0	0	0	5860

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).

This effort includes support to the DoD response to Chemical and Biological (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.

Anti-terrorism funding (AT6) provides DoD with a process and means to conduct assessments of installation vulnerabilities to CB threats.

Weapons of Mass Destruction Civil Support Team (WMD-CST) (CM6) provides management funds to execute the Consequence Management Research Development Acquisition (RDA) program.

Line No: 000

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - 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.

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 through 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.

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)), through the Deputy Assistant to the Secretary of Defense for Chemical/Biological Defense (DATSD(CBD)); 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

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.

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 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	43785	81494	80134	80335	83958	78156	79784	Continuing	Continuing
AT6	ANTI-TERRORISM (RDT&E MGT SUPPORT)	393	0	0	0	0	0	0	0	393
CM6	HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1313	1536	1533	0	0	0	0	0	4382
DT6	JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	2868	3960	3952	3961	4066	4039	3945	Continuing	Continuing
DW6	MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	13907	55451	54695	55201	55932	53708	55567	Continuing	Continuing
MS6	RDT&E MGT SUPPORT	22857	17675	17086	17834	20431	16673	16325	Continuing	Continuing
O49	JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&E	2447	2872	2868	3339	3529	3736	3947	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 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

Anti-terrorism (AT6) funding provides DoD with a process and means to conduct assessments of installation vulnerabilities to CB threats.

Weapons of Mass Destruction Civil Support Team (WMD-CST) (CM6) provides management funds to execute the Consequence Management RDA program.

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 through 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) through the DATSD(CBD); 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

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.

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.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

B. Program Change Summary:		**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		36434	81425	81417
Current Biennial Budget Estimate (FY 2007)		43785	81494	80134
Total Adjustments		7351	69	-1283
a. Congressional General Reductions		0	-1181	0
b. Congressional Increases		0	1250	0
c. Reprogrammings		0	0	0
d. SBIR/STTR Transfer		0	0	0
e. Other Adjustments		7351	0	-1283

Change Summary Explanation:

Funding: FY05 - Realignment of funding to provide program management support for the DoD CBDP (+$7,354K MS6); Other adjustments (-$3K).

FY07 - Defense-wide directed offsets (-$46K CM6; -$118K DT6; -$1,639K DW6; -$511K MS6; -$86K O49). Inflation adjustment (+$21K CM6; +$55K DT6; +$763K DW6; +$238K MS6; +$40K O49).

Schedule: N/A

Technical: N/A

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

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **AT6**

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
AT6	ANTI-TERRORISM (RDT&E MGT SUPPORT)	393	0	0	0	0	0	0	0	393

A. Mission Description and Budget Item Justification:

Project AT6 ANTI-TERRORISM (RDT&E MGT SUPPORT): The growing threat of the use of CB agents in acts of terrorism places DoD installations and personnel at a higher risk. With that in mind, this budget item provides DoD with the means to address the threat of CB terrorism to DoD installations and personnel. It attempts to address the requirements identified in Presidential Decision Directive (PDD) 39 and PDD 62. Funding provides for the development of combating CB terrorism planning, training, and exercise technologies; and the sustainment of those technologies in the outyears, as appropriate. Sponsors of projects funded under this budget item would include DTRA, Joint Staff J-34, Assistant Secretary of Defense Special Operation Low-Intensity Conflict (ASD (SO/LIC)), United States Army Edgewood Chemical and Biological Command (ECBC), United States Army Chemical School, Fort Leonard Wood (USACMLS), the Technical Support Working Group, and other organizations involved with combating CB terrorism.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
FORCE PROTECTION	393	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
AT6

FY 2005 Accomplishments:

- 393 Performed post exercise lessons learned for the Joint Service Installation Pilot Program (JSIPP) and performed analysis of standardized test requirements for first responder and civilian protection equipment.

Total 393

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **CM6**

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CM6	HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1313	1536	1533	0	0	0	0	0	4382

A. Mission Description and Budget Item Justification:

Project CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT): This funding provides resources to successfully execute the Consequence Management RDA program. Weapons of Mass Destruction Civil Support Teams (WMD-CSTs) and U.S. Army Reserve Reconnaissance and Decontamination assets would receive the systems developed and procured under this program.

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	1313	1521	1533

FY 2005 Accomplishments:

- 286 WMD CST - Provided Systems Engineering and Subject Matter Expert support to the ALS SEP Phase V CST project.
- 622 WMD CST - Provided System Engineering and Subject Matter Expert support to the ALS Increment I project.
- 405 WMD CST - Provided Financial Oversight and Program Management Support.

Total 1313

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT **CM6**

FY 2006 Planned Program:

- 650 WMD CST - Systems Engineering, Management Oversight and Subject Matter Expert support to the ALS Increment I project.
- 585 WMD CST - Financial Oversight and Program Management Support.
- 286 WMD CST - Systems Engineering and Subject Matter Expert support to the UCS Increment I project.

Total 1521

FY 2007 Planned Program:

- 550 WMD CST - Systems Engineering and Subject Matter Expert support to the ALS Increment I project.
- 290 WMD CST - Systems Engineering, Management Oversight, and Subject Matter Expert support for COTS/GOTS/NDI equipment technical refreshment.
- 693 WMD CST - Financial Oversight and Program Management Support.

Total 1533

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	15	0

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DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
CM6

FY 2006 Planned Program:

- 15 SBIR

Total 15

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
DT6	JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	2868	3960	3952	3961	4066	4039	3945	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 2005	FY 2006	FY 2007
JOINT REQUIREMENTS OFFICE DOCTRINE AND TRAINING	2868	3910	3952

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

FY 2005 Accomplishments:

- 1430 DT - Continued to 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. Continued assistance and support for providing CBRN defense related improvements to the four phases of the Joint Training System at Combatant Commands. Continued to provide assistance in the implementation of required solutions for appropriate representation of CBRN defense in Combatant Command's modeling and simulation tools. Continued to provide CBRN defense related training support to Combatant Command staffs, services and the USCG.
- 680 DT - Continued to support the revision and development of CBRN defense medical and physical sciences MTTPs: (1) CBRN Aspects of Consequence Management; (2) CBRN Defense of Theater Fixed Sites, Ports, and Airfields; (3) Health Service Support in an CBRN Environment; (4) CBRN Health Service Support in Homeland Defense; (5) Treatment of Biological Warfare Agent Casualties. Continued to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 100 DT - Continued to support additional joint participation in the JSLC.
- 658 DT - Continued analyses to define capability gaps, capability needs and approaches to provide those capabilities within CBRN defense across all DoD mission areas. Continued execution of the Joint Enabling Concept for CBRN Defense experimentation strategy. Continued analyses to support the development of joint architectures, joint operational concepts, and supporting technical annexes. Continued development, coordination and integration of joint capability requirements.

Total 2868

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

FY 2006 Planned Program:

- 2899 DT - Continue to 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. Continue assistance and support for providing CBRN defense related improvements to the four phases of the Joint Training System at Combatant Commands. Continue to provide assistance in the implementation of required solutions for appropriate representation of CBRN defense in Combatant Command's modeling and simulation tools. Continue to provide CBRN defense related training support to Combatant Command staffs, services and the USCG.
- 901 DT - Continue to support the revision and development of CBRN defense medical and physical sciences MTTPs. Continue to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 110 DT - Continue to support additional joint participation in the JSLC.

Total 3910

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

FY 2007 Planned Program:

- 2828 DT - Continue to 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. Continue assistance and support for providing CBRN defense related improvements to the four phases of the Joint Training System at Combatant Commands. Continue to provide assistance in the implementation of required solutions for appropriate representation of CBRN defense in Combatant Command's modeling and simulation tools. Continue to provide CBRN defense related training support to Combatant Command staffs, services and the USCG.
- 1004 DT - Continue to support the revision and development of CBRN defense medical and physical sciences MTTPs. Continue to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 120 DT - Continue to support additional joint participation in the JSLC.

Total 3952

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	50	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DT6**

FY 2006 Planned Program:

- 50 SBIR

Total 50

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
DW6	MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	13907	55451	54695	55201	55932	53708	55567	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 Biological (CB) defense materiel, equipment, and systems from concept through 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.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
DW6

Projects programmed for testing at DPG include: Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD); Joint Service Lightweight Nuclear Biological Chemical Reconnaissance System (JSLNBCRS); 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); Joint Service Sensitive Equipment Decontamination (JSSED); Technical Readiness Evaluation for Biological Stand-off Detection Systems; Joint Service General Purpose Mask (JSGPM); Joint Warning and Reporting System (JWARN) Block II Phase II; Chemical, Biological, Radiological, and Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR); Joint Protective Aircrew Ensemble (JPACE); and Joint Biological Stand-off Detection System (JBSDS).

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
DUGWAY PROVING GROUND	13907	54924	54695

FY 2005 Accomplishments:

- 10393 DPG, MRTFB - Partially supported DPGs civilian labor for CB test mission to include safety, security, resource management, surety operations, range control, environmental oversight, and workload management. This account provided the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment. Supported a portion of the overhead costs of the civilian labor costs for Army Program Budget Guidance (PBG) authorizations. The balance was reimbursed from test customer funds.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

FY 2005 Accomplishments (Cont):

- 700 DPG, MRTFB - Partially supported DPGs CB test mission contractor labor costs. This is the institutional portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. The balance was reimbursed from test customer funds.
- 595 DPG, MRTFB - Provided for 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 DPGs Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.
- 2219 DPG, MRTFB - Provided for revitalization/upgrade and sustainment efforts at DPG commensurate with technology/facility requirements for future and current testing. Efforts included: chemical protective mask test fixture upgrades, instrumentation and methodology developments to meet the Department of Army requirements for real time monitoring of chemical warfare agents, Polymerase Chain Reaction analysis improvements, annual service contracts for equipment operation, diagnostics, and calibration, and purchases to upgrade/replace aging equipment and instrumentation.

Total 13907

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
DW6

FY 2006 Planned Program:

- 34987 DPG, MRTFB - 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 account provides the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment. Funding in FY06 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 8020 DPG, MRTFB - Supports DPGs 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. Funding in FY06 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 1300 DPG, MRTFB - 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. Funding in FY06 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

FY 2006 Planned Program (Cont):

- 9379 DPG, MRTFB - 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. Funding in FY06 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314314 -- December 2002, Sec 232).
- 1238 DPG, MRTFB - 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.

Total 54924

FY 2007 Planned Program:

- 38066 DPG, MRTFB - 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 account provides the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment. Funding in FY07 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

FY 2007 Planned Program (Cont):

- 8270 DPG, MRTFB - Supports DPGs 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. Funding in FY07 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 1756 DPG, MRTFB - 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. Funding in FY07 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 6603 DPG, MRTFB - 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. Funding in FY07 puts this MRTFB in compliance with the National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314314 -- December 2002, Sec 232).

Total 54695

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	527	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **DW6**

FY 2006 Planned Program:

- 527 SBIR

Total 527

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
MS6	RDT&E MGT SUPPORT	22857	17675	17086	17834	20431	16673	16325	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 through the Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense (DATSD(CBD)), 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).

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
MS6

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 provided for the CB Archive Information Management System (CBAIMS) a means to collect, assemble, catalog and archive CBD information from multiple service locations into a central repository and library.

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.

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 2005	FY 2006	FY 2007
CHEM BIO ARCHIVE INFORMATION MGT SYS	204	0	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

FY 2005 Accomplishments:

- 204 CBAIMS - Archived Chemical and Biological information from multiple service locations.

Total 204

	FY 2005	FY 2006	FY 2007
JOINT REQUIREMENTS OFFICE (JRO) MANAGEMENT	3882	3816	3241

FY 2005 Accomplishments:

- 3882 JRO MGT - Represented the Services and Combatant Commanders in the development, coordination, and integration of CBRN defense operational capabilities across all DOD mission areas. Planned, coordinated and executed the development and review of: Joint CBRN defense capability requirements; DOD CBDP program guidance; Joint CBRN Defense Modernization Plan; Integrated medical and physical sciences CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities, and the CBD Annual Report to Congress.

Total 3882

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

FY 2006 Planned Program:

- 3816 JRO MGT - 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.

Total 3816

FY 2007 Planned Program:

- 3241 JRO MGT - 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.

Total 3241

	FY 2005	FY 2006	FY 2007
JOINT TEST INFRASTRUCTURE WORKING GROUP	3662	4899	4953

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
MS6

FY 2005 Accomplishments:

- 3662 JTIWG - Established detailed requirements for T&E development, test system instrumentation and integration, and test technology validation for relating simulant performance to system agent performance based on both developmental and operation testing. Supported JPEO in planning programs to refine methodology for data fusion and visualization. Procured additional ground truth instrumentation and initiate mobile capability. Expanded participation in system IPTs to plan and execute structured programs for acquisition of T&E capabilities. Provided input to JSCBIS, POM. and the annual CBDP Congressional Report. Supported DOT&E in oversight of key CBDP systems. Supported early involvement of Operational Testing Agencies in T&E programs, reviewed test plans, test methodologies, and requirements documents. Supported T&E Executive Project Officer.

Total 3662

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

FY 2006 Planned Program:

- 4899 JTIWG - Finalize and obtain T&E Community approval for T&E requirements for methodology, test system instrumentation and integration, and test technology validation for relating simulant performance to system agent performance based on both developmental and operational testing. Support JPEO in planning programs to refine methodology for data fusion and visualization. Procure additional ground truth instrumentation and expand mobile capability. Expand participation in system IPTs to plan and execute structured programs for acquisition of T&E capabilities. Provide input to JSCBIS and POM annual CBDP Congressional Report. Support DOT&E in oversight of key CBDP systems. Continue support for early involvement of Operational Testing Agencies in T&E programs, review of test plans, test methodologies, and requirements documents. Continue support for T&E Executive Project Officer.

Total 4899

FY 2007 Planned Program:

- 4953 JTIWG - Test and Evaluate methodology development, test system instrumentation integration, and test technology validation for relating simulant performance to system agent performance based on both developmental and operational testing. Support JPEO in planning programs to refine methodology for data fusion and visualization. Procure additional ground truth instrumentation and validate mobile capability. Expand participation in system IPTs to plan and execute structured programs for acquisition of T&E capabilities. Provide input to JSCBIS and POM annual CBDP Congressional Report. Support DOT&E in oversight of key CBDP systems. Continue support for early involvement of Operational Testing Agencies in T&E programs, review of test plans, test methodologies, and requirements documents. Continue support for T&E Executive Project Officer.

Total 4953

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

	FY 2005	FY 2006	FY 2007
OFFICE SECRETARY OF DEFENSE MGMT	10878	3906	3952

FY 2005 Accomplishments:

- 3992 OSD MGT - Performed program reviews/assessments, provided programmatic PPBE oversight/analysis, provided congressional issue analysis and support. Supported financial management services provided by the DTRA such as funding distribution and execution reporting.
- 3075 OSD MGT - Developed strategy and processes for multiagent broad spectrum biological countermeasures.
- 2500 OSD MGT - Developed strategy and processes to promote interoperability and integration of Chemical, Biological, and Radiological training, education and doctrine among the Services. Provided planning, analytical, technical, and integration support to combat Weapons of Mass Destruction including capabilities-based assessments and synchronization of DoD efforts with other agencies.
- 907 OSD MGT - Prepared quarterly financial statements and supplementary financial information to support the independent financial audit of the CBDP.
- 404 OSD MGT - Provided support to international CBD programs. Developed implementation guidance for international programs. Drafted the Canada, United Kingdom and US (CANUKUS) Memorandum of Understanding Roadmap.

Total 10878

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

FY 2006 Planned Program:

- 3906 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.

Total 3906

FY 2007 Planned Program:

- 3952 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.

Total 3952

	FY 2005	FY 2006	FY 2007
PROGRAM ANALYSIS AND INTEGRATION OFFICE (PA&IO) MGT	4231	4881	4940

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) **MS6**

FY 2005 Accomplishments:

- 4231 PA&IO MGT- Developed assessments to support RDA Planning. Provided analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the PB submissions. Responded to specialized evaluation studies throughout the PPBE process. Provided JSCBIS database management.

Total 4231

FY 2006 Planned Program:

- 4881 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.

Total 4881

FY 2007 Planned Program:

- 4940 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.

Total 4940

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	173	0

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
MS6

FY 2006 Planned Program:

- 173 SBIR

Total 173

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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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
O49	JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&E	2447	2872	2868	3339	3529	3736	3947	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 2005	FY 2006	FY 2007
JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM	2447	2844	2868

FY 2005 Accomplishments:

- 2447 JCDE - Continued to support the JCD for CBRND in conducting work shops, studies, war games and limited objective experiments to explore, refine, and validated potential solutions and alternatives that will update and improve the Joint CBRND concept.

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

DATE
February 2006

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
O49

FY 2005 Accomplishments (Cont):
Total 2447

FY 2006 Planned Program:

- 2844 JCDE - Continue to 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.

Total 2844

FY 2007 Planned Program:

- 2868 JCDE - Continue to 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.

Total 2868

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	28	0

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DATE
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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

PROJECT
O49

FY 2006 Planned Program:

- 28 SBIR

Total 28

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	5860	0	0	0	0	0	0	0	5860
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5860	0	0	0	0	0	0	0	5860

A. <u>Mission Description and Budget Item Justification:</u> 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.

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DATE
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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

B. Program Change Summary:		**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		0	0	0
Current Biennial Budget Estimate (FY 2007)		5860	0	0
Total Adjustments		5860	0	0
a. Congressional General Reductions		0	0	0
b. Congressional Increases		0	0	0
c. Reprogrammings		0	0	0
d. SBIR/STTR Transfer		5860	0	0
e. Other Adjustments		0	0	0

Change Summary Explanation:

Funding: FY05 - Funding transferred and applied to SBIR program (+$5,860K SB6).

Schedule: N/A

Technical: N/A

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

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT **SB6**

COST (In Thousands)		FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5860	0	0	0	0	0	0	0	5860

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 through sales back to the government or in the private sector.

The Small Business Technology Transfer (STTR) Program like SBIR, is a government-wide program, mandated by the Small Business Research and Development Enhancement Act of 1992, PL 102-564. STTR was established in FY94 as a three-year pilot program. In early 1996, the General Accounting Office 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.

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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 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.

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BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT
SB6

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
SBIR/STTR	5860	0	0

BUDGET ACTIVITY 7
OPERATIONAL SYSTEMS DEVELOPMENT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	2070	9949	7035	9928	19059	16120	20903	Continuing	Continuing
CA7	CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	2070	9949	7035	7016	7207	7206	6978	Continuing	Continuing
IP7	INDIVIDUAL PROTECTION OPERATIONAL SYS DEV	0	0	0	2912	11852	8914	13925	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
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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 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2006 PB)		2131	10093	8137
Current Biennial Budget Estimate (FY 2007)		2070	9949	7035
Total Adjustments		-61	-144	-1102
a. Congressional General Reductions		-2	-144	0
b. Congressional Increases		0	0	0
c. Reprogrammings		-43	0	0
d. SBIR/STTR Transfer		-17	0	0
e. Other Adjustments		1	0	-1102

Change Summary Explanation:

Funding: FY07 - Defense-wide directed offsets (-$200K). Inflation adjustment (+$98K). Offset to support the enhanced Medical Biological research efforts in the Transformational Medical Technology Initiative (-$1,000K)

Schedule: N/A

Technical: N/A

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

DATE **February 2006**

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 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CA7	CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	2070	9949	7035	7016	7207	7206	6978	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV: This project 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 project support the upgrade of fielded detectors against emerging and changing chemical threat agents

B. Accomplishments/Planned Program

	FY 2005	FY 2006	FY 2007
DETECTOR MODS	2070	1925	0

FY 2005 Accomplishments:

- 1445 DETECTMOD - (ACADA Enhancement) Initiated upgrades to enhance TIC and other detection capabilities of the ACADA. Initiated development efforts to test and implement enhancements.
- 625 DETECTMOD - (ICAM High Temperature Storage) Initiated effort to reduce effects of prolonged, extremely high temperature on ICAM. Primary areas are seating materials evaluation and acetone source design.

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

DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

FY 2005 Accomplishments (Cont):
Total 2070

FY 2006 Planned Program:

- 1015 DETECTMOD - (ACADA Enhancement) Continue design and testing of enhanced ACADA configurations, including upgrades to platform data interfaces.
- 910 DETECTMOD - (ICAM High Temperature Storage) Continue design efforts and prove-out for switchable acetone source and any new materials recommended.

Total 1925

	FY 2005	FY 2006	FY 2007
T&E RANGE INSTRUMENTATION/TECHNOLOGY UPGRADE	0	7927	7035

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

DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2006 Planned Program:

- 2300 DPG, MRTFB - 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 include: portable mass-spectrometer point detector to support operational testing an articulated headform allowing testing of the protective masks and components, and second generation glove fixture incorporating operational movements.

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

DATE
February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2006 Planned Program (Cont):

- 2300 DPG, MRTFB - 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 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 under protective suits in the MIST chamber, as well as upgraded supervisory control and data acquisition systems for controlling testing conditions in chemical test fixtures and chambers.

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

DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2006 Planned Program (Cont):

- 2107 DPG, MRTFB - Provides for upgrade of the Life Sciences Test Facility instrumentation and equipment at 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.

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2006 Planned Program (Cont):

- 1220 DPG, MRTFB - 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 CB defense program Developmental Test/Operational Test. Modernization includes the development of a realistic CB threat generation system where challenges for detectors will be done with explosives and dissemination devices that will be faced 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. Additional technology upgrades include low-range and high-range vertical wind profilers, hoghn resolution video-recording capability for test grids, LIDAR referee systems for real-time stimulant cloud characterization, and distributed-test capabilities.

Total 7927

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

DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2007 Planned Program:

- 1997 DPG, MRTFB - Continues to 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. Included are the second 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 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.
- 1997 DPG, MRTFB - Continues to provide 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 in the chambers includes the continued development of a chemical aerosol generation and sampling capability, and real-time sampling system under protective suits in the MIST chamber. Characterization of articulated testing fixtures constructed during FY06 will commence.

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DATE **February 2006**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2007 Planned Program (Cont):

- 1804 DPG, MRTFB - Continues to provide for upgrade of the Life Sciences Test Facility instrumentation and equipment at 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 the continued development of 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, genetic-sequencer/analyzer characterization, capability for rapid antibody production to support biosensor testing, and instrumentation for new BSL-3 laboratory space.
- 1237 DPG, MRTFB - 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 CB defense program Developmental Test/Operational Test. 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 faced 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.

Total 7035

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DATE **February 2006**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA7 - Operational Systems Development

PE NUMBER AND TITLE
0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)

PROJECT
CA7

	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	97	0

FY 2006 Planned Program:

- 97 SBIR

Total 97

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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DETECTMOD													
OTHT SB - DETECTMOD - (ACADA) Govt OT&E	MIPR	Various	U	0	1065	3Q FY05	735	2Q FY06	0	NONE	0	1800	0
OTHT SB - DETECTMOD - (ICAM) Govt OT&E	MIPR	Various	U	0	460	3Q FY05	625	2Q FY06	0	NONE	0	1085	0
T&E UPGRAD													
Dugway Proving Ground, UT	C/FP	TBS	U	0	0	NONE	7927	2Q FY06	7035	2Q FY07	0	14962	0
Subtotal III. Test and Evaluation:				0	1525		9287		7035		0	17847	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE **February 2006**

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	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DETECTMOD													
PM/MS SB - DETECTMOD - (ACADA) JPM NBCCA, RDECOM Spt	MIPR	Various, APG, MD	U	0	380	3Q FY05	282	2Q FY06	0	NONE	0	662	0
PM/MS SB - DETECTMOD - (ICAM) JPM NBC CA, RDECOM Spt	MIPR	Various, APG, MD	U	0	165	3Q FY05	283	2Q FY06	0	NONE	0	448	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC, Alexandria, VA	U	0	0	NONE	97	NONE	0	NONE	0	97	0
Subtotal IV. Management Services:				0	545		662		0		0	1207	
TOTAL PROJECT COST:				0	2070		9949		7035		0	19054	

Remarks:

Exhibit R-4a, Schedule Profile

DATE **February 2006**

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 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	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							3Q	—	—	—	—	—	—	—	—	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									1Q	—	—	—	—	2Q																		
M22 ACADA TIC Detection Tests															3Q	4Q																
ICAM Prototype Manufacture & Test									1Q	—	3Q																					
ICAM Changes to Tech Data Package												4Q																				

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