Department of Defense Fiscal Year (FY) 2006/FY 2007 Budget Estimates

February 2005

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

Volume 4
Chemical Biological Defense Program (CBDP)

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

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Department of Defense Chemical/Biological Defense Program Overview

Fiscal Year (FY) 2006-2007 Budget Estimates

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. In addition, the DoD CBDP supports the "1-4-2-1" force planning construct articulated in the Department of Defense Annual Report to the President and the Congress, September 2002.

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 FY06, 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. Among others, DTOs include capabilities for Standoff Biological Aerosol Detection, Wide Area Aerial Reconnaissance for Chemical Agents, Environmental Fate of Agents, Low-Level Chemical Warfare Agent Exposure: Effects and Countermeasures, Detection of CB Contamination on Surfaces, Advanced Air Purification System Model, Chemical and Biological Hazard Environment Prediction and Hazard Prediction with Nowcasting, advanced medical CB prophylaxes, Rapid Detection, Threat Assessment and Attribution of Genetically Engineered Biothreat Organisms Using Microarray-Based Resequencing Technologies, smallpox therapeutics, Multiagent Vaccines for Bio-Warfare Agents, and advanced decontamination capabilities.

Technologies currently in advanced development (Budget Activities 4 and 5) 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 advanced development in FY06 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 (Contamination Avoidance at Sea Ports of Debarkation (CASPOD) and Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR)), Joint Service Transportable Decontamination System - Small Scale (JSTDS-SM), 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 toxin vaccine, equine encephalitis vaccines, plague vaccine and ricin 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 Agent Water Monitor (JCBAWM), Non-Traditional Agent (NTA) Detection Improvement Program, Joint Biological Standoff Detection System (JBSDS) Increment II, 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, and Joint Service Aircrew Mask (JSAM).

In FY06, 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 FY06 include JSAM, Multi-Service Radiacs (MSR), and Joint Service Transportable Decontamination System - Small Scale (JSTDS-SM). Systems continuing procurement in FY06 include the Joint Effects Model (JEM), Joint Protective Aircrew Ensemble (JPACE), 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), JCAD, JSLSCAD, JBPDS, biological defense vaccines (Anthrax Vaccine Adsorbed), CB Protective Shelters (CBPS), and chemical and biological defense equipment for installation force protection.

The FY06 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 2006 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 two primary areas of increased emphasis in this year's budget are the CB Defense Program's test and evaluation infrastructure and novel biodefense initiatives. The budget improves our biological and chemical research labs infrastructure/ability to address known and emerging threats. It also 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.

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.

APPROPRIATION: 0400D Research, Development, Test & Eval, Defense Wide **Date: February 2005**

Line No	Program Number	Item	Budget Activity	Thousands of Dollars FY 2004	FY 2005	FY 2006	FY 2007
005	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	46,946	54,056	72,533	52,701
	Basic Research			**46,946**	**54,056**	**72,533**	**52,701**
015	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	150,898	168,827	187,787	179,914
	Applied Research			**150,898**	**168,827**	**187,787**	**179,914**
034	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	3	148,276	181,972	164,481	149,428
	Advanced Technology Development (ATD)			**148,276**	**181,972**	**164,481**	**149,428**
072	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	4	128,350	125,718	100,796	74,392
	Advanced Component Development and Prototypes (ACD&P)			**128,350**	**125,718**	**100,796**	**74,392**
088	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (SDD)	5	172,505	145,794	280,908	228,319
	System Development and Demonstration (SDD)			**172,505**	**145,794**	**280,908**	**228,319**
130	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	6	44,612	36,434	81,425	81,417
000	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	11,447	0	0	0
	RDT&E Mgt Support			**56,059**	**36,434**	**81,425**	**81,417**
154	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	7	0	2,131	10,093	8,137
	Operational Systems Development			**0**	**2,131**	**10,093**	**8,137**
	Total Chemical and Biological Defense Program			**703,034**	**714,932**	**898,023**	**774,308**

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BUDGET ACTIVITY 1
BASIC RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

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

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

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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	46946	54056	72533	52701	58910	56734	51911	53167	Continuing	Continuing
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	11847	12241	15707	16290	17324	17648	16160	18471	Continuing	Continuing
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	27067	32437	45966	25528	28470	26363	22306	21532	Continuing	Continuing
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	8032	9378	10860	10883	13116	12723	13445	13164	Continuing	Continuing

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

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2005

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 2005**

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

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

B. Program Change Summary:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	51380	36769	37839	40913
Current Biennial Budget Estimates (FY 2006)	46946	54056	72533	52701
Total Adjustments	-4434	17287	34694	11788
a. Congressional General Reductions	-59	-962	0	0
b. Congressional Increases	0	18250	0	0
c. Reprogrammings	-3369	0	0	0
d. SBIR/STTR Transfer	-870	0	0	0
e. Other Adjustments	-136	-1	34694	11788

Change Summary Explanation:

Funding: FY05 - Congressional increases to enhance projects within the science and technology base (+$6,000K CB1; +$12,250K TB1). Congressional general reductions and other adjustments (-$172K CB1; -$541K TB1; -$250K TC1).

FY06 - Enhance research efforts in physical sciences and medical biological countermeasures (+$2,000K CB1; +$28,000K TB1). Inflation adjustment (+$232K CB1; +$266K TB1; +$160K TC1). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (+$5,895K CB1; +$1,053K TB1; -$2,912K TC1).

FY07 - Enhance research efforts in physical sciences (+$4,000K CB1). Inflation adjustment (+$273K CB1; +$428K TB1; +$183K TC1). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (+$1,563K CB1; +$5,324K TB1; +$17K TC1).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA1 - Basic Research**	PE NUMBER AND TITLE **0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	11847	12241	15707	16290	17324	17648	16160	18471	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 and improved detection technologies for biological agents and toxins; new and improved detection technologies for chemical threat agents; advanced concepts in individual and collective protection; new concepts in decontamination; innovative concepts in modeling and simulation; and information on the chemistry and toxicology of threat agents and related materials.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Basic Research	6527	0	0	0

FY 2004 Accomplishments:

- 1976 Brooks City Base Biotechnology - Investigated technologies for Brooks City Base Biotechnology.
- 989 Fluorescence Activated Sensing Technology (FAST) - Investigated technologies for FAST.

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

DATE

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

FY 2004 Accomplishments (Cont):

- 1089 Advanced Sensor Design and Threat Detection Facility - Developed sensors and sensory materials that remediate threats to national security as well as public health.
- 1484 Detection of Biological Agents in Water - Investigated technologies for the detection of biological age sources.
- 989 Biodetection Research - Investigated technologies for biodetection.

Total 6527

	FY 2004	FY 2005	
Decontamination	1049	941	

FY 2004 Accomplishments:

- 834 Solution Decontamination - Completed feasibility studies for determination of semi-solid materials che with absorbed CB agents. Completed studies of the decontamination mechanism of secondary catalyti the addition of monovalent salts to a peracid-dioxirane. Completed investigations of the efficacy of art anti-bacterial and anti-viral activity. Completed investigations of the utility of high-field Nuclear Mag (NMR) methodology in conjunction with tandem mass spectrometry to determine structures of biologi Completed investigations of chemical strategies designed for dissolution and deactivation/destruction o organic nanoemulsions.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 215 Sensitive Equipment Decontamination - Completed investigation of efficacy of vaporous dimethyl dioxirane for decontamination of BW agents.

Total 1049

FY 2005 Planned Program:

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

Total 941

	FY 2004	FY 2005	FY 2006	FY 2007
Detection	3443	2430	0	0

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 2085 Biological Agent Identification Detection - Completed proof-of-principle experimentation; completed theoretical correlations to experimental data for polarization opposition effect. Continued synthesis of candidate stochastic biosensor elements; continued screening testing. Demonstrated proof-of-principle for separation of biological warfare (BW) agent surrogates using optical pressure. Continued investigations of micro-channel mixing via configurable heating and surfaces by comparison of data and model prediction. Initiated investigations of antimicrobial peptides for applicability as bio-detection elements; initiated testing program. Initiated effort to characterize polymorphic regions of B. mallei genome using ribotyping, repetitive sequence polymerase chain reaction, and randomly amplified polymorphic DNAs.
- 1058 Integrated CB Detection - Completed proof of principle investigations of novel materials for selective interactions with CW agent simulants in conjunction with optical amplification to enhance detection. Continued investigations of surface modified gold nanoclusters for detection of chemical warfare (CW) agents. Initiated investigations of modified nanofilaments for detection of CB warfare agents.
- 300 Chemical Stand-off Detection - Completed investigations of the applicability of new techniques to the analysis and processing hyperspectral Fourier Transform Infrared (FTIR) data. Completed investigations of novel two-photon fluorescence spectroscopy method and potential applicability to stand-off CB detection.

Total 3443

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

DATE: **February 2005**

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

FY 2005 Planned Program:

- 1000 Integrated CB Detection - Continue investigations of modified nanofilaments for the detection of CB agents. Initiate novel approaches for improved CB detection. Complete investigations of modified gold nanosensors.
- 1430 Biological Agent Identification Detection - Complete testing of candidate ion channel stochastic sensor elements. Complete investigations of micro-channel mixing via configurable heating and surfaces. Complete development of test articles and procedures. Continue testing of antimicrobial peptides. Continue effort to characterize polymorphic regions of B. mallei genome using ribotyping, repetitive sequence polymerase chain reaction, and randomly amplified polymorphic DNAs. Initiate effort to assess recombinant single-domain antibodies for bio-detection. Initiate effort to assess utility of modified nanowires for biodetection. Initiate effort to assess novel light-scattering method for bio-identification. Initiate effort to enhance utility of microfluidic control for bio-detection. Initiate investigations of bacterial ghosts as simulants for biological warfare agents.

Total 2430

	FY 2004	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	0	302	0	0

FY 2005 Planned Program:

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

Total 302

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
Protection	583	1111	0	0

FY 2004 Accomplishments:

- 157 Respiratory Protection - Completed theoretical and empirical investigations of the mechanisms of interactions of vapors with active surfaces.
- 192 Shelter Protection - Initiated investigations of the interrelationships between the chemical, physical, and transport properties of novel butyl rubber membranes prepared by electrospinning.
- 234 Individual Protection (Clothing) - Evaluated effectiveness of nanofiber-coated fabrics for protection against particulate materials. Completed investigations of protection afforded by a novel surface modified membrane.

Total 583

FY 2005 Planned Program:

- 441 Respiratory Protection - Initiate research into understanding physical adsorption processes for Toxic Industrial Chemicals (TICs) and CW agents on novel adsorbent materials. Initiate effort to develop performance model for the electric-swing adsorption process.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 670 Shelter Protection - Continue investigations of the interrelationships between the chemical, physical, and transport properties of novel butyl rubber membranes prepared by electrospinning; expand this effort to include permeation performance evaluations of related polymeric materials. Initiate effort to assess utility of nanoparticle-modified fibers for denaturing CW agents.

Total 1111

	FY 2004	FY 2005	FY 2006	FY 2007
Supporting Science and Technology	245	1406	0	0

FY 2004 Accomplishments:

- 245 Chemical Threat Agents - Continued investigations of CW Blister (HD) agent volatility in humidified air.

Total 245

FY 2005 Planned Program:

- 1406 Chemical Threat Agents - Conduct effort to measure ambient volatility of CW agents.

Total 1406

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
Threat Agent Science	0	0	15707	16290

FY 2006 Planned Program:

- 4057 Threat Agent Science - Conduct basic research to support fourth dimensional contamination plume interpolation, and agent environmental fate and low level toxicity for emerging threat agents.
- 3875 Threat Agent Science - Conduct basic research to investigate nano-technologies for the detection of CB agents, novel light scattering for bio-identification, and predictive models for ambient volatility of agents and simulants.
- 3825 Threat Agent Science - Conduct basic research to investigate theoretical and empirical mechanisms and interactions of vapors with active surfaces for CB protection, utility of nano-particle modified fibers for agent protection.
- 3950 Threat Agent Science - Conduct basic research to investigate ionic liquids and metal catalysts for decontamination, the feasibility of semi-solid material chemical composition with absorbed CB agents and efficacy of vaporous decontaminates.

Total 15707

FY 2007 Planned Program:

- 4000 Threat Agent Science (Detection) - Conduct basic research for innovative concepts in areas such as nanotechnology, hyperspectral imaging, and materials research applicable to detection.
- 3000 Threat Agent Science (Decontamination) - Conduct basic research for innovative concepts in decontamination.
- 3800 Threat Agent Science (Protection) - Conduct basic research for innovative concepts in protection.

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

DATE: **February 2005**

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

FY 2007 Planned Program (Cont):

- 5490 Threat Agent Science (Modeling and Simulation) - Conduct basic research for innovative concepts in areas such as modeling and simulation, and threat agent science of CB agents. Continue transitioning of basic research from previous years.

Total 16290

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	5951	0	0

FY 2005 Planned Program:

- 992 Biodefense Research
- 992 New York Structural Biology Center
- 3967 Fluorescene Activated Sensing Technology (FAST) Integrated Threat Management System - Integrated Threat Management System - Continue a multi-phased basic research program that will include DNA amplification, using MDA technology, of anthrax, staph. aureus with the 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 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.

Total 5951

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	100	0	0

FY 2005 Planned Program:

- 100 SBIR

Total 100

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	84416	100631	104317	104741	96961	90197	83962	82303	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	88011	92075	60787	76897	70670	73260	66155	54853	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
TT3 TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	27067	32437	45966	25528	28470	26363	22306	21532	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 #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for Radiological prophylaxes), 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 2004	FY 2005	FY 2006	FY 2007
Diagnostics	3501	3913	9778	4577

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 3501 Diagnostic Technologies - Continued basic research on new diagnostic approaches to the early recognition of infection focusing on technologies compatible with future comprehensive integrated diagnostic systems. Continued to develop reagents and assays for appropriate biological markers for early recognition of infection and identify new host and agent-specific biological markers. Continued research directed toward new technological approaches for diagnosis of biological threat agents and new sample processing technologies.

Total 3501

FY 2005 Planned Program:

- 3913 Diagnostic Technologies - Develop nucleic acid and immunoassays to detect identified threat agents in clinical samples. Perform research on diagnostic approaches to the early recognition of infections. Develop confirmatory tests for toxins. Pursue evaluation of systems compatible with future comprehensive integrated diagnostics. Direct research towards solving the technical problems associated with clinical sample preparation and rapid diagnostics. Evaluate new chemistries for the identification of biological warfare agents.

Total 3913

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

DATE: **February 2005**

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:

- 5278 Diagnostic Technologies - Expand nucleic acid and immunoassays for the detection of identified threat agents in clinical samples to additional agents/targets. Improve existing assays, as new genomic data and techniques become available. Continue to perform research on diagnostic approaches to the early recognition of infections and the evaluation of systems compatible with future comprehensive integrated diagnostics. Simplify sample preparation techniques and evaluating rapid diagnostics platforms. Continue to evaluate new chemistries for the identification of biological warfare agents.
- 4500 Multiagent (Broad Spectrum) Medical Countermeasures - Identify common biomarkers for at least four broad classes of Pathogenic Agents (e.g. intracellular facultative bacilli, hemorrhagic viruses, pox viruses, protein neurotoxins).

Total 9778

FY 2007 Planned Program:

- 4577 Diagnostic Technologies - Continue to develop/expand collection of nucleic acid and immunoassays for the detection of identified threat agents in clinical samples to additional agents/targets. Improve sensitivity and specificity of existing assays, as new genomic data and techniques become available. Identify new diagnostic approaches to the early recognition of infections. Continue to evaluate systems compatible with future comprehensive integrated diagnostics. Identify suitable DNA and RNA sample preparation techniques and rapid diagnostics platforms. Expand evaluation of new chemistries for the identification of biological warfare agents to latest state-of-the-art methods.

Total 4577

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	0	0	19500	0

FY 2006 Planned Program:

- 19500 Multiagent (Broad Spectrum) Medical Countermeasures - Convene expert committee of nationally prominent biologists, biochemists, geneticists, pharmaceutical development experts to assist in overseeing an encompassing technical strategy and roadmap development for development of broad-spectrum countermeasures that focus on common host-response mechanisms of defense to develop means to defeat emerging/engineered threats. Approach 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 a systematic evaluation of pathogen Biomarkers for categories of Biological Warfare (BW) Pathogenic Agents that tie to commonality in pathogen mechanism(s) of action (pathodeme concept - diverse pathogens that effect similar types of pathology in a host, e.g. hemorrhage, liver disease, etc.). 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. Develop collaborations and 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 sequence.

Total 19500

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

DATE: **February 2005**

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

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

PROJECT: **TB1**

	FY 2004	FY 2005	FY 2006	FY 2007
Medical Biological Warfare Defense	4610	0	0	0

FY 2004 Accomplishments:

- 4610 Medical Biological Warfare Defense, Engineered Pathogen Identification and Countermeasures Program (Bug to Drug) - Identified the impact of biowarfare pathogens on the human body using computer models and direct protein analysis. Continued to develop counteracting drugs based on a comprehensive understanding of how the potential drug candidates impact the human body, outside of their desired effect against the pathogen.

Total 4610

	FY 2004	FY 2005	FY 2006	FY 2007
Pretreatments	10610	7020	7511	9560

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 3058 Vaccines, Bacterial - Continued studies on the molecular mechanisms of pathogenesis of selected BW threat agents. Identified additional virulence determinants of Brucella species. Initiated a study to identify and characterize novel virulence proteins of F. tularensis.
- 1701 Vaccines, Toxin - Conducted computational chemistry studies to develop next generation botulinum neurotoxin and recombinant ricin toxin A-chain (rRTA) vaccines. Evaluated theoretical feasibility of multivalent vaccines by protein engineering. Evaluated the role of glycosylation or other structural modifications in reducing efficacy of botulinum neurotoxin vaccines.
- 1701 Vaccines, Viral - Completed investigating the role of cytotoxic T cells in the Ebola virus-mouse model. Examined the use of virus-like particles (VLP) as antigen for vaccines for filoviruses. Initiated research to investigate the role of cytotoxic T cells in the filovirus model in non-human primates.
- 3228 Vaccines, Plant Vaccine Development - Developed plant-based subunit vaccines as countermeasures against biological warfare agents.
- 922 Vaccines, Plant Derived Vaccine Against Anthrax and Smallpox - Developed plant-based subunit vaccines against anthrax and smallpox as countermeasures against agents of biological warfare. Expressed both proposed vaccines in edible plants using a constitutive expression system based on transgenic plants. Expressed in spinach functionally important epitopes of the anthrax recombinant Protective Antigen (rPA) and the B5R protein of the smallpox virus, using a transient expression system based on plant virus vectors. Evaluated immunogenicity of plant-based vaccines in animal models.

Total 10610

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

DATE: **February 2005**

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

FY 2005 Planned Program:

- 1200 Multiagent Vaccines - Identify bacterial multiagent vaccine target antigens. Clone and express chimeric vaccine constructs for multivalent toxin and bacterial vaccines by protein engineering. Initiate effort on anthrax-plague combined vaccine development. Establish new animal efficacy models. Explore genomics/proteomics-based high throughput approaches for potential vaccine target antigens. Explore use of Virus-Like Particles (VLP) for multiagent vaccine development. Evaluate DNA-based immunization against viral threat agents.
- 5020 Vaccine Research Support - Initiate project to develop a generic Bacillus vaccine, including identification of target antigens. Facilitate and consolidate research efforts in Brucella/Burkeholderia/Tularemia to include identification of potential intracellular pathogen target antigens. Characterize novel virulence genes and gene products of selected bacterial threat agents to support discovery of new medical countermeasures. Identify new Staphylococcal Enterotoxin A/Staphylococcal Enterotoxin B (SEA/SEB) structural determinants as potential immunogens to protect against multiple SE serotypes. Begin investigating the role of cytotoxic T cells in the higher animal model of filovirus infection. Expand development of animal models of aerosol infection with filoviruses. Determine the use of VLP and adenoviruses as antigen delivery platforms for vaccines against filoviruses.
- 800 Vaccine Technology Development - Use high throughput gene expression and sequencing technologies for a genomics/proteomics-based approach toward rapid vaccine development. Begin studies in anthrax/plague molecular vaccine development and evaluation. Initiate Bacillus generic molecular vaccine construction.

Total 7020

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

DATE: **February 2005**

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 - Continue to develop anthrax-plague vaccine, including 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. Evaluate use of VLP for vaccine development. Continue to evaluate DNA-based immunization against viral threat agents.
- 4700 Vaccine Research Support - Develop construction of initial generic Bacillus vaccine candidates and begin initial immunogenicity studies. Identify and evaluate new target antigens for intracellular pathogens. Evaluate T-cell immune response against intracellular pathogens. 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 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.
- 1500 Vaccine Technology Development - Improve DNA-based immunization platforms as a multiagent anthrax-plague vaccine strategy, including evaluation of a third component. Continue studies in Bacillus molecular vaccine development and evaluation. Explore alternate immunization platforms for efficacy against selected biothreat agent pathogens.

Total 7511

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

DATE: **February 2005**

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:

- 1760 Multiagent Vaccines - Continue anthrax/plague/third component trivalent vaccine research. Identify valid target antigens for different biothreat pathogens and the use of genetic engineering approaches to construct unique gene fusions encoding multi-epitope protein antigens to optimize multiagent vaccine delivery. Expand effort in multiagent vaccine development to include the evaluation of novel immunization platforms and therapeutic immunization strategies for post-exposure treatment. Develop use of VLP for multiagent vaccine development. Continue to evaluate DNA-based immunization against viral threat agents.
- 5800 Vaccine Research Support - Proceed with generic Bacillus vaccine construction/evaluation. Establish broad spectrum vaccine strategy to target the four major facultative intracellular bacteria 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 the genomics/bioinformatics database information 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). Conduct stability analysis and immunogenicity of SEB toxin vaccine in support of clinical trial. 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.

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

DATE: **February 2005**

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):

- 2000 Vaccine Technology Development - Evaluate studies in anthrax/plague molecular vaccine development. Evaluate generic Bacillus molecular vaccine. Explore additional alternate immunization platforms for efficacy against selected biothreat agent pathogens. Continued refinement and development of approaches to identify potential vaccine target antigens. Continued evaluation of gene expression technologies for in vitro analysis of host responses to bacterial pathogens. Comparison of genomics/bioinformatics database information for the design of unique target antigens. Design and evaluation of cell-mediated immune targeting of antigens for intracellular pathogens.

Total 9560

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	8346	9089	9177	11391

FY 2004 Accomplishments:

- 5018 Therapeutics, Toxin - Continued custom synthesis of structural analogs of lead compounds identified by high-throughput screening assays for botulinum and SE toxins. Refined x-ray data for toxin-inhibitor co-crystal structures of most promising botulinum neurotoxin and SE inhibitors. Performed computational chemistry studies to refine lead compound co-crystal structures.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 2120 Therapeutics, Viral - Continued research for development of intervention strategies for filovirus-induced shock and therapeutic approaches that combine antiviral and anti-shock drug therapy. Completed research for development of in vitro assays utilizing filovirus polymerase as a potential antiviral drug target. Generated baculovirus-expressed Ebola virus proteins for use in research studies. Identified sequences within Ebola virus genes that are highly susceptible to short interfering RNA-mediated degradation.
- 1208 Therapeutics, Bacterial - Evaluated novel lead antimicrobial compounds in small animal models for anthrax and plague.

Total 8346

FY 2005 Planned Program:

- 1243 Therapeutics, Bacterial - Evaluate efficacy of selected licensed and investigational products for efficacy in mice against bacterial threat agents. Maintain surveillance of products in the U.S. so that new products can be evaluated for efficacy in vitro and in vivo. Initiate efficacy studies of Investigational New Drug (IND) antibiotics for inhalational anthrax in non-human primates (NHPs). Evaluate Heat Shock Proteins (HSPs) with candidate vaccines. Evaluate immunoglobulin therapies for bacterial threat agents.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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

FY 2005 Planned Program (Cont):

- 5361 Therapeutics, Toxin - Identify custom synthesis of structural analogs of lead compounds by high-throughput screening assays for toxins. Continue to refine X-ray data for toxin-inhibitor co-crystal structures of most promising botulinum neurotoxin inhibitors. Perform computational chemistry studies to refine lead compound co-crystal structures. Perform test of lead compounds using in vivo model systems for assessment of therapeutic efficacy. Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy. Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for toxins. Test FDA-approved drugs for septic shock as adjunct Staphylococcal Enterotoxin (SE) therapeutics in vivo. Develop lead monoclonal antibody systems against toxins as passive immunotherapeutics in vivo.
- 2485 Therapeutics, Viral - Develop high throughput in vitro drug screening assays and identify new molecular targets and develop assays by identification of a suitable target, cloning, expression and characterization of the target protein. Perform drug discovery assays to identify and test leading antivirals with in vitro assays. Identify compounds that demonstrate antiviral activity in small animal models and in vitro assays using authentic filoviruses and orthopox viruses. Develop a strategic plan for advanced development of compounds in regards to manufacturing and licensure. Identify potential mediators of shock or toxemia and determine the basis for the pathogenesis of shock or toxemia in appropriate animal models. Develop, characterize and evaluate the ability of monoclonal antibodies to viral specific proteins to neutralize the specific virus in vitro and in vivo and map protective monoclonal antibodies to distinct epitopes and to determine affinity and the importance of isotype. Develop appropriate small animal model to study Marburg virus infection.

Total 9089

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

DATE: **February 2005**

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:

- 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.
- 2600 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.
- 1300 Therapeutics, Viral - Identify and test leading antivirals in appropriate animal models and worst-case scenarios such as viral challenge dose, route, and variation in viral challenge strain. 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.
- 4000 Multiagent (Broad Spectrum) Medical Countermeasures - 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 9177

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

DATE: **February 2005**

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:

- 1991 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.
- 6100 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. Investigate and develop additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans.
- 3300 Therapeutics, Viral - Optimize key dosing, administration, and pharmacological characteristics of leading antivirals in appropriate animal 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 11391

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	12150	0	0

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

DATE: **February 2005**

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

FY 2005 Planned Program:

- 5951 Bug to Drug - Develop a Consortium structure with key industry performers to augment innovative rapid drug development approaches. Identify detailed rapid strategy to form BioRosettex.
- 992 National Center for Biodefense -
- 248 Research to Discover Neutralizing Antibodies to Mycotoxins -
- 1984 Therapeutic Approaches to Anthrax and Ricin Toxins - Design antisense oligomers to block transcription and translation of critical proteins involved in the pathogenesis of biowarfare pathogens such as a bacterial (anthrax), viral or toxin (ricin) threats. Demonstrate utility in either cell culture (in vitro) systems or small mammal animal models.
- 2975 Therapeutic Phosphorodiamidate Morpholino Oligomers (PMOs) - Demonstrate proof-of-principle of patented technology for antisense molecules by conducting and assisting in animal model studies designed to protect against viral biodefense pathogens.

Total 12150

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	265	0	0

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DATE: **February 2005**

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

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

PROJECT: **TB1**

FY 2005 Planned Program:

- 265 SBIR

Total 265

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	44784	43678	61654	42401	35344	29153	31017	31606	Cont	Cont
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	44353	68272	63124	37131	31339	32232	41281	41147	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	8032	9378	10860	10883	13116	12723	13445	13164	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 #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for Radiological prophylaxes), 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 2004	FY 2005	FY 2006	FY 2007
Chemical Warfare Agent Defense	4715	0	0	0

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DATE: **February 2005**

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

FY 2004 Accomplishments:

- 1575 Chemical Warfare Agent Defense, Inhalation Therapeutics - Investigated enzymatic targets of HD. Conducted a dose-response assessment of early acute lung injury in rodents administered intravascular HD. Determined the biochemical effects in male and female guinea pigs following exposure to chemical warfare agents.
- 265 Chemical Warfare Agent Defense, Medical Diagnostics - Identifed molecular intracellular proteomic changes following HD exposure.
- 1775 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Identifed biomarker(s) to indicate low level chemical exposure. Continued studies of neurotoxic effects of low dose chemical agent exposure. Examined potential for immunological deficits following nerve agent exposures. Identifed potential medical countermeasures for low level chemical warfare nerve agent and HD exposure.
- 1100 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Investigated changes to pulmonary airway resistance and permeability of pulmonary microvessels induced by exposure to various concentrations of NTA. Identifed changes in the global gene expression profile of cultured human epidermal keratinocytes (HEK) in response to NTA exposure using DNA microarrays and genomics techniques to aid in considering strategies leading to medical countermeasures.

Total 4715

	FY 2004	FY 2005	FY 2006	FY 2007
Diagnostics	0	195	305	305

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

DATE: **February 2005**

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

FY 2005 Planned Program:

- 195 Diagnostic Technologies - Perform basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from Chemical Warfare Agent (CW agents) exposure. Conduct experiments focusing on detecting sulfur mustard exposure by cleavage of adducts formed with blood proteins. Assess lab based Ellman cholinesterase assay for automation and increased throughput. Explore alternate sample collection/extraction technology to standard hydrolysis product assays.

Total 195

FY 2006 Planned Program:

- 305 Diagnostic Technologies - Continue basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Focus on developing assays for detecting sulfur mustard exposure. Develop automation/high throughput strategy for cholinesterase assay. Continue development of alternate sample collection/extraction technology. Assess the development of a genomics-based diagnostic screening test for chemical warfare agent exposure.

Total 305

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

DATE: **February 2005**

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

FY 2007 Planned Program:

- 305 Diagnostic Technologies - Continue basic research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Complete assessment of alternate sample collection/extraction technology. Pursue development of a genomics-based diagnostic screening test for chemical warfare agent exposure. Initiate lab based studies to assess the development of a genomics-based diagnostic screening test for chemical warfare agent exposure.

Total 305

	FY 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	0	2415	2131	1729

FY 2005 Planned Program:

- 966 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Examine multiple biomarkers as confirmatory for low level chemical exposure. Study possible immunological deficit following low level chemical nerve agent exposure. Examine physiological parameters that may alter sensitivity to low level CW agents. Identify potential medical countermeasures for low level CW agent exposures.
- 1449 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Compare the direct effects of NTA on smooth muscle, hematic constituents, and lung to determine role in toxicity. Continue 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.

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DATE: **February 2005**

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

FY 2005 Planned Program (Cont):
Total 2415

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 CNS gene and protein expression in rodents.
- 1600 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.

Total 2131

FY 2007 Planned Program:

- 1729 Non-Traditional Agents - Study the medical effects of additional classes of NTAs including ion channel blockers and convulsive agents.

Total 1729

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	3317	6691	8424	8849

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 410 Nerve Agent Defense, Neuroprotection - Evaluated drug treatment strategies and combinations of therapies for nerve agent-induced seizures.
- 2907 Vesicant Agent Defense, Vesicant Medical Countermeasures - Identified mechanism of action of vesicant pretreatment compounds. Determined effects of sulfur mustard (HD) on cell structure using multiphoton laser scanning microscopy. Analyzed in vitro effects of HD on cellular energy metabolism. Studied in vitro (inside the test tube) biochemical changes induced by HD.

Total 3317

FY 2005 Planned Program:

- 821 Nerve Agent Defense, Neuroprotection - Test putative neuroprotectants in at least one and possibly more than one animal species.
- 3938 Vesicant Agent Defense, Vesicant Medical Countermeasures - Characterize pathophysiological endpoints. Continue elucidation of pathophysiological schema. Identify points in schema for potential pharmaceutical intervention.
- 1932 Chemical Warfare Agent Defense, Inhalation Therapeutics - Identify and solicit 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 6691

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

DATE: **February 2005**

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 - Compare these events to what is known of mechanisms of cell death in other forms of status epilepticus and to stroke. As candidates emerge, priority may be given to studies which attempt to characterize the mechanism of protection seen with successful candidates. Develop and refine screening protocol for candidate down-select. The mechanisms with various classes of candidates may differ. Refine planned therapeutic animal models, to conclude development in vivo (inside the organism) model instrumentation, and its interface with future screening protocols for lead therapeutics studies. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Investigate and develop additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans.
- 4100 Vesicant Agent Defense, Vesicant Medical Countermeasures - Continue to explore purification and delivery strategies of vesicant pretreatments, to include percutaneous, ocular, and pulmonary exposures. Continue to analyze in vitro effects of sulfur mustard agent (HD) on cellular energy metabolism. Continue to study in vitro biochemical changes induced by HD. Initiate efforts to develop biological tissue assays for selected compounds. Refine planned therapeutic animal models, to conclude development in vivo model instrumentation, and its interface with future screening protocols for lead therapeutics studies. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Investigate and develop additional resuscitative technologies that integrate established and emerging anti-vesicant therapeutic modalities into suitable candidate therapies in humans.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005
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):

- 2124 Chemical Warfare Agent Defense, Inhalation Therapeutics - Initiate experimentation in the areas of interest by establishing exposure/effects models from in vitro to in vivo systems by addressing a commonality of response/effects, i.e., identify a common response effect regardless of inhaled toxicant. Refine planned therapeutic animal models, to conclude development in vivo model instrumentation, and its interface with future screening protocols for lead therapeutics studies. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Investigate and develop additional resuscitative technologies that integrate established and emerging toxicant therapeutic modalities into suitable candidate therapies in humans.

Total 8424

FY 2007 Planned Program:

- 2600 Nerve Agent Defense, Neuroprotection - Finish initial conceptual framework of known mechanisms of cell death in other forms of status epilepticus and to stroke. Relate events to known mechanisms of propagation of status epilepticus in well-studied animal models, and plan to begin to develop suitable refinement to established animal models with demonstrated clinical correlation to humans.
- 4100 Vesicant Agent Defense, Vesicant Medical Countermeasures - Determine in animal models the safety and efficacy of selected compounds for percutaneous, ocular and pulmonary exposure. Complete efforts to develop biological tissue assays for selected compounds and design screening protocol to down-select these candidate compounds. Refine planned therapeutic animal models, to conclude development in vivo model instrumentation, and its interface with future screening protocols for lead therapeutics studies.

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

DATE: **February 2005**

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

FY 2007 Planned Program (Cont):

- 2149 Chemical Warfare Agent Defense, Inhalation Therapeutics - Initiate studies largely (in vivo when possible) based on data gathered in the previous study year, to address the administration of a medical countermeasure(s) therapy(ies) against multiple agent exposures. Refine planned therapeutic animal models, to conclude development in vivo model instrumentation, and its interface with future screening protocols for lead therapeutics studies. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Investigate and develop additional resuscitative technologies that integrate established and emerging toxicant therapeutic modalities into suitable candidate therapies in humans.

Total 8849

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	77	0	0

FY 2005 Planned Program:

- 77 SBIR

Total 77

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

DATE: **February 2005**

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

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

PROJECT: **TC1**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	21698	24518	21516	31172	39449	40969	40384	39952	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	10097	13129	24363	19222	32238	31302	32460	34454	Cont	Cont

BUDGET ACTIVITY 2
APPLIED RESEARCH

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

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

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

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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	150898	168827	187787	179914	174754	164819	160263	159361	Continuing	Continuing
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	84416	100631	104317	104741	96961	90197	83962	82303	Continuing	Continuing
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	44784	43678	61654	42401	35344	29153	31017	31606	Continuing	Continuing
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	21698	24518	21516	31172	39449	40969	40384	39952	Continuing	Continuing
TR2	MEDICAL RADIOLOGICAL DEFENSE (APPLIED RESEARCH)	0	0	300	1600	3000	4500	4900	5500	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
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 2005**

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

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

B. Program Change Summary:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	151372	104385	101628	88519
Current Biennial Budget Estimates (FY 2006)	150898	168827	187787	179914
Total Adjustments	-474	64442	86159	91395
a. Congressional General Reductions	-114	-2884	0	0
b. Congressional Increases	0	67325	0	0
c. Reprogrammings	3583	0	0	0
d. SBIR/STTR Transfer	-2571	0	0	0
e. Other Adjustments	-1372	1	86159	91395

Change Summary Explanation:

Funding: FY05 - Congressional increases to enhance projects within the science and technology base (+$38,875K CB2; +$21,700K TB2; +$6,750K TC2). Congressional general reductions and other adjustments (-$1,762K CB2; -$621K TB2; -$501K TC2).

FY06 - Enhance research efforts in physical sciences and medical/biological countermeasures (+$40,000K CB2; +$33,600K TB2; +$7,400K TC2). Inflation adjustment (+$1,542K CB2; +$654K TB2; +$316K TC2). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (-$3,546K CB2; +$1,529K TB2; +$4,664K TC2).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**

Funding (cont.)

FY07 - Enhance research efforts in physical sciences and chemical/biological medical countermeasures (+$45,000K CB2; +$12,600K TB2; +$7,400K TC2). Inflation adjustment (+$1,758K CB2; +$739K TB2; +$523K TC2). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (+$5,181K CB2; +$7,104K TB2; +$11,090K TC2).

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	84416	100631	104317	104741	96961	90197	83962	82303	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 threat chemical-biological (CB) 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 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 Defense Technology Objectives (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 2004	FY 2005	FY 2006	FY 2007
Applied Research	25636	0	0	0

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 923 Air Containment Monitoring System - Developed systems for contained air monitoring for chemical agents.
- 923 Atmospheric Plasma for Bio Defense Decontamination - Investigated technologies for atmospheric plasma for biological defense decontamination.
- 1291 Bioinformatics Network - Created linkages which interactively approach the extraction of rapid analysis of biological data.
- 3226 Consortium for Countermeasures for Biological Threats - Developed multiple technologies and implementations to counter the threat of attack using biological threat agents against civilian and military populations.
- 1937 Center for Information Assurance Security
- 5068 LSH-SAW Biosensor - Investigated acoustic wave technology for biosensors.
- 1152 Rapid Decontamination System for Nerve Agents - Explored technologies for rapid decontamination system for nerve agents.
- 923 Automated Lipid Phase Detection of Toxic Compounds - Automated lipid phase detection of toxic compounds program was baselined.
- 969 Bioinformatics Equipment - Explored technologies for bioinformatics equipment.
- 923 Remote Optical Sensing Program - Explored technologies for remote optical sensing.
- 1937 Bioinformatics - Tailored approaches to extract and rapidly analyze biological data to enhance the study of chemical and biological threat agent effects.
- 923 Early Warning and Detection Program - Explored technologies for early warning and detection.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 2213 Detection of Chemical, Biological and Pollutant Agents in Water - Developed technology to detect CB and pollutant agents in potable water sources.
- 3228 Global Pathogen Portal - Developed tools for creating, acquiring, and analyzing molecular level biological data.

Total 25636

	FY 2004	FY 2005	FY 2006	FY 2007
Decontamination	3843	3279	6902	6102

FY 2004 Accomplishments:

- 824 Decontamination, Solid Phase Chemistry - Evaluated enhanced oxidative nanoparticles as reactive sorbents for both chemical and biological agent decontamination. Conducted a study to determine why nanoscale materials show no advantage over conventional microscale solids in sorbent operations.
- 1900 Decontamination - Oxidative Formulation (DTO CB44) Baseline Capability Assessment (BCA) #18/23/34 - Initiated chamber testing over operational temperature range, finished material compatibility testing and formulated peroxycarbonate and peracid candidates into a dry powder and/or concentrated liquid. Finalized formulation of newly added oxidative approaches and conducted material compatibility and agent testing. This DTO supported the Joint Tactical Decontamination Systems (JSTDS).

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 1119 Decontamination, Sensitive Equipment - Evaluated portable approaches for the cleaning of small sensitive surfaces for use in the interior of vehicles and aircraft. Conducted a cold weather thermal decontamination study for interior spaces. Continued studies on activated sorbent suspensions of hydrofluoro ethers (HFE) solvent systems.

Total 3843

FY 2005 Planned Program:

- 1061 Decontamination, Sensitive Equipment BCA#17/18 - Conclude studies on activated sorbent suspensions in hydrofluoro ethers (HFE) solvent systems. Initiate a new effort to develop reactive impregnated solvent based wiping systems. Initiate 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.
- 2218 Decontamination - Oxidative Formulation (DTO CB44) BCA#18/23/34 - Complete chamber testing over operational temperature range, finish material compatibility testing, and formulate new oxidative approaches into a dry powder and/or concentrated liquid. This DTO completes in FY05 and supports the Joint ServiceTactical Decontamination Systems (JSTDS).

Total 3279

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DATE: **February 2005**

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:

- 3010 Decontamination, Sensitive Equipment BCA#17/18 - Continue effort to develop reactive impregnated solvent based wiping systems. Continue development of a better filtration system for hydrofluoro ethers (HFE) solvent systems as a product improvement for the Joint Service Sensitive Equipment Decontamination (JSSED) acquisition effort. Develop alternative approaches for small area clean up to support the Joint Platform Interior Decontamination (JPID) requirement.
- 3596 Decontamination, Solution Chemistry BCA#18/23/34 - Develop an improved decontaminant for the use on aircraft and other sensitive exteriors for transition to the Joint Service Family of Decontamination Systems (JSFDS) program. Conclude development of a chlorine dioxide based man portable decontamination system. Investigate alternative solution based technologies for man portable devices for immediate and operational decontamination scenarios.
- 296 Decontamination, Solid Phase Chemistry - Conduct survey to identify new approaches to solid phase (reactive sorbent) decontaminants.

Total 6902

FY 2007 Planned Program:

- 3824 Decontamination, Sensitive Equipment BCA#17/18 - Complete development of reactive impregnated solvent based wiping systems. Transition to Joint Platform Interior Decontamination (JPID) effort as part of the tool kit to decontaminate sensitive equipment interiors. Complete the development of an improved filtration system for hydrofluoro ethers (HFE) solvent cleaning systems and transition to the Joint Service Sensitive Equipment Decontamination System (JSSED) program as a product improvement. Transition technologies for JPID to demonstration phase.

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DATE: **February 2005**

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):

- 1938 Decontamination, Solution Chemistry BCA#18/23/34 - Continue efforts to develop an improved decontaminant for the use on aircraft and other sensitive exteriors.
- 340 Decontamination, Solid Phase - Down select candidate novel solid phase (reactive sorbent) decontaminants and initiate agent testing programs.

Total 6102

	FY 2004	FY 2005	FY 2006	FY 2007
Detection	16718	11546	22482	23393

FY 2004 Accomplishments:

- 3473 Laser Induced Surface Analysis (LISA) Prototype - Constructed and demonstrated a laser enhanced Raman system that can detect the presence of chemical agent on surfaces at a contamination level of 0.5 g/m2 and is suitable for integration into a reconnaissance vehicle to demonstrate on-the-move capability. Transitioned to Advanced Technology Development in FY05.
- 4603 Point Detection, Biological Identification - Completed development and demonstration of Force Discrimination Assay (FDA). Completed development and testing automation of chip-based phylogenetic analysis of biological materials. Identified engineering/manufacturing issues for the transition of quantum dot technology to the Critical Reagent Program for application to enhance antibody ticket technology for improved stability and sensitivity. Completed mapping of spore protein markers from biological agents for mass spectroscopy based systems.

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DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 1634 Lightweight Integrated CB Detection (DTO CB50) BCA#3/4 - Completed population of the technical parameter database. Transitioned the Analysis of Alternative (AoA) to advanced development for selection of best technology to meet the requirements of the Joint Modular CB Detector.
- 981 Point Detection, Integrated CB - Completed exploration of novel concepts in small, combined chemical and biological sensors. Continued development of millimeter wave spectroscopy.
- 4127 Stand-off Biological Aerosol Detection (DTO CB35) BCA#1 - Completed construction and laboratory characterization of breadboards to demonstrate the capability to detect and discriminate biological and non-biological agents at a concentration of 1,000 agent containing particles per liter of air (ACPLA) at a range of 1 km. This DTO supported the Joint Biological Stand-off Detection Systems (JBSDS).
- 1500 Wide-Area Aerial Reconnaissance for Chemical Agents (DTO CB53) BCA#28 - Completed the development of a 30-Hz frame rate, 64-pixel Fourier transform infrared (FTIR) hyperspectral imager (TurboFT). Continued the development of Adaptive Infrared Imaging Spectroradiometer (AIRIS). Continued characterization of the sensor performance on the TurboFT. Initiated development of off-line algorithms and signal processing techniques. This DTO supported the Joint Service Light Nuclear Biological Chemical Reconnaissance System (JSLNBCRS) and Stryker vehicle programs.
- 400 Detection of CB Contamination on Surfaces (DTO CB52) BCA#33 - Completed data collection on three surfaces for four surety agents using laser enhanced Raman spectroscopy to detect the presence of the chemical agents and transitioned data to Laser Induced Surface Analysis (LISA) prototype.

Total 16718

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DATE: **February 2005**

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

FY 2005 Planned Program:

- 5104 Stand-off Biological Aerosol Detection (DTO CB35) BCA#1 - Evaluate 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. Conduct 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).
- 1699 Wide Area Aerial Reconnaissance for Chemical Agents (DTO CB53) BCA#28 - Develop a 3-Hz, 128 x 128 tunable Adaptive Infrared Imaging Spectroradiometer (AIRIS). Perform sensor characterization tests. Develop off-line algorithms and signal processing techniques. This DTO supports the Joint Service Light Nuclear Biological Chemical Reconnaissance System (JSLNBCRS) and Stryker programs.
- 4743 Point Detection, Integrated CB BCA#28 - Continue development of first generation breadboard based on millimeter wave spectroscopy for bio detection. Initiate Raman spectroscopy for the detection/identification of biological materials. Expand effort from Lightweight Integrated CB Detection (DTO CB50) on aerosol properties for identification of chemicals.

Total 11546

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 chemcial stand-off detection requirements. This DTO completes in FY06 and supports the Joint Biological Stand-off Detection Systems (JBSDS).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 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.
- 4500 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.
- 2000 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.
- 3278 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.
- 2450 Chemical Point Detection BCA#20/33 - Initiate the development of a micro gas analyzer with technology from the Defense Advanced Research Projects Agency. Merge requirements from Increment 2 of Joint Chemical Agent Detector as the baseline technical parameters. Focus is on real-time (less than 5 sec) detection/identification of submiosis sensitivity levels (parts per trillion) and the expansion of the number of detectable materials to include the high priority toxic industrial chemicals (TICs).
- 778 Chemical Stand-off Technology BCA#7 - Initiate the development of new signatures using non-linear technologies (i.e. femtosecond spectroscopy) to reduce the false alarm rate at least and order of magnitude and increase the detection range out beyond 10 km.

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DATE: **February 2005**

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):

- 776 Biological Stand-off Technology BCA#1 - Initiate the development of new signatures in nontraditional regions of the electromagnetic spectrum (i.e. millimeter wave or TeraHertz spectroscopy) that reduces the false alarm rate by at least an order of magnitude.

Total 22482

FY 2007 Planned Program:

- 6000 Point Detection, Integrated CB BCA#28 - Complete and demonstrate first generation breadboard based on millimeter wave spectroscopy for bio detection. Complete Raman spectroscopy for the detection/identification of biological materials.
- 4000 Detection of CB Contamination on Surfaces - Continue the development of technology to meet the needs to detect contamination on surfaces in a post decontamination application.
- 4000 Biological Identification - Continue the development of proteomics to identify biomarkers for the identification of biological agents in complex biological backgrounds.
- 5000 Chemical Point Detection - 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).
- 2197 Chemical Stand-off Technology - Continue the development of new signatures using non-linear technologies (i.e. femtosecond spectroscopy) to reduce the false alarm rate at least an order of magnitude and increase the detection range out beyond 10 km.

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DATE: **February 2005**

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):

- 2196 Biological Stand-off Technology BCA #1 - Continue the development of new signatures in nontraditional regions of the electromagnetic spectrum that reduces the false alarm rate by at least an order of magnitude.

Total 23393

	FY 2004	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	7990	7715	31161	26749

FY 2004 Accomplishments:

- 2507 Battle Space Management - Continued efforts to optimize data fusion and decision-making across networks and to provide visualization of network sensor responses under the auspices of Joint Warning and Reporting Network (JWARN) program requirements in concert with the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture.
- 1800 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA#5/6 - Investigated availability of high altitude dispersion model in support of the Joint Effects Model (JEM) Program. Transitioned advanced predictive capabilities Multi-community Environmental Storm Observatory (MESO) to JEM program. Enhanced the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.

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DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 1437 Simulation Based Acquisition - Developed support tools for future acquisition decisions that would emerge from a study of CBDP requirements. Identified user base from within the Chemical Biological Defense Program. Initiated prototype tool design efforts.
- 2246 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA#8/9 - Tested and finalized Aerial Port of Debarkation (APOD) and Sea Port of Debarkation (SPOD) representation. Populated SPOD representation. Completed Joint Operational Effects Federation (JOEF) demonstration. Completed independent validation and verification on core model.

Total 7990

FY 2005 Planned Program:

- 1154 Chemical and Biological Hazard Environment Prediction (DTO CB55) and Hazard Prediction with Nowcasting (DTO CB62) BCA#5/6/8 - Continue refinement of Multi-community Environmental Storm Observatory (MESO) code for transition to Joint Effects Model (JEM). Perform independent validation and verification of a computation fluid dynamics - based tools set. Continue 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) BCA#1-39 - Complete tool design and begin prototype construction and testing. Consolidate analytic library and analysis methodology for use by program for rapid decision making. Use iterative user-focused design techniques to enhance tool/capability usability and acceptance.

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DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 1477 Battlespace Management BCA#2/3/9 - Continue 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. Integrate existing models into the Global Information Grid (GIG) and Net-Centric Enterprise System (NCES).
- 2289 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA#5/6/8 - Test and transition to Joint Operational Effects Federation (JOEF) transition. Develop mobile forces module. Conduct internal Verification and Validation (V&V). Complete DTO.

Total 7715

FY 2006 Planned Program:

- 9000 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA#5/6/8/9 - Complete development of mobile forces modules. Identify new applications for Joint Operational Effects Federation (JOEF). Begin development activities for the integration of JOEF components with theater-level models such as the Joint Integrated Campaign Model (JICM). Begin development of consequence management tools for deployed forces.

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

DATE: **February 2005**

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):

- 9700 Chemical and Biological Hazard Environment Prediction (DTO CB55) and Hazard Prediction with Nowcasting (DTO CB62) BCA#5/6 - Complete DTO CB55. Continue DTO CB62 to enhance near-surface environmental characterization and demonstrate improvements using the Joint Effects Model (JEM). Continue high altitude intercept effects characterization. Initiate littoral and maritime effects model for JEM. Expand sensor data fusion algorithm develop efforts. Consolidate source term determination module development. Conduct study of NTA transport and dispersion module requirements for JEM. Conduct study to assess military utility of computational fluid dynamics models for JEM. Begin applied research on epidemiological module for JEM. Assess and select appropriate methods for integrating near real-time weather data into transport and dispersion models. Continue development of urban dispersion models. Begin development of integrated indoor modeling capability. Leverage off other activities' waterborne transport modeling efforts. Begin developing a test-bed for transport and dispersion modeling.
- 7000 Battlespace Management BCA#2/3/9 - Design Net-Centric Enterprise Systems (NCES) modules for migration to test environment. Continue sensor-data fusion and source term location technologies in conjunction with chemical and biological hazard prediction thrust area. 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 JWARN. Begin development of appropriate bridging capability to link and extend JWARN capabilities to homeland defense architectures. Begin development of a modeling/exercise rehearsal capability for JWARN.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 5461 CBDP Decision Capability BCA#1-39 - Continue building the analytical framework. Begin development of representative prototypes for each of the other capability areas. 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.

Total 31161

FY 2007 Planned Program:

- 10000 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA#5/6/8/9 - Integrate mobile forces modules. Identify new applications for Joint Operational Effects Federation (JOEF). 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.
- 5300 Chemical and Biological Hazard Environment Prediction (non-DTO) and Hazard Prediction with Nowcasting (DTO CB62) 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. Conduct validation and verification (V&V) of high altitude intercept module. Continue the development of a test-bed for transport and dispersion modeling.

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

DATE: **February 2005**

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):

- 7000 Battlespace Management BCA#2/3/4/8/9 - Build Net-Centric Enterprise Systems (NCES) modules for migration to test environment. 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 technology CBRN display technologies. Continue sensor-data fusion and source term location technologies - integrate with Joint Effects Model (JEM) and Joint Operational Effects Federation (JOEF).
- 4449 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. Continue development of representative prototype models for each of the capability areas.

Total 26749

	FY 2004	FY 2005	FY 2006	FY 2007
Protection	6227	7646	10962	10476

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 1500 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) BCA#11 - Demonstrated ability to produce materials employing self detoxification chemistries for G-nerve agents, VX, and blister (HD) by commercial electrospinning. Demonstrated improved reaction rates for hyperbranched surface migrating compounds. Demonstrated agent deactivation chemistry of fiber bound catalysts through solution and vapor challenge testing for a target reactivity level of 1 mg agent/cm2/day. Demonstrated effectiveness of scaled up N-halamine treated materials against significant biological challenges. Demonstrated nanoparticle reaction rates in excess of 2 mg agent/cm2/day in both fiber and coating form. Down-selected most reactive, cost effective nanoparticle compositions and optimized those materials for reactivity rates and range of materials they detoxify. This DTO supported Joint Expeditionary Collective Protection (JECP) program . The DTO also supported the current Joint Service Lightweight Integrated Suit Technology (JSLIST) program.
- 1218 Collective Protection, Shelters - Continued development and testing of advanced CB shelter materials and prototype shelter system components (shell, liner, support, airlocks, seams and seals). Continued to identify and test chemistries for self decontaminating shelter materials and applications. Continued airflow modeling of airlock configurations to optimize designs to reduce dwell time, increase entry/exit rate, and facilitate dual entry and exit of personnel, patients and supplies.
- 900 End-of-Service-Life Indicators (ESLI) for NBC Mask Filters (DTO CB36) BCA#19 - Continued fabrication and demonstration testing of ESLI filter concept models to verify ESLI is a reliable indicator of gas life depletion for key target agents (i.e., GB, HD, CK, AC and CG). Continued efforts to determine the effects of common environmental factors (i.e., heat and humidity) that may impact ESLI performance and evaluated the effects of long term storage. This DTO supported several protective equipment (mask) programs.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 748 Individual Protection, Masks - Refined advanced mask system concepts. Optimized candidate mask sealing options and assessed anti-fogging and moisture control technologies. Prepared human use bio-aerosol protection factor assessment protocol, established and validated test procedures, and conducted human Protection Factor study with monodisperse inert aerosols.
- 861 Collective Protection, Air Purification - Characterized constraints of mature candidate adsorbent compositions against a wide range of TIC and CW agents including aging, chemical reaction regeneration cycles, relative humidity, temperature, and material compatibility. Optimized regenerative process for temperature, pressure and cycle time to verify candidate adsorbent materials. Developed regenerative technology demonstrator and obtaining performance data. Initiated database development of unit processes for developing advance air purification systems. Tested anti-microbial aerosol/ particulate filter media and developed enhanced prototype. Transitioned effort to Advanced Technology Development.
- 1000 Advanced Adsorbents for Protection Applications (DTO CB08) - Completed fundamental single-pass and regenerative filtration adsorption models. Completed performance verification of new adsorbent formulations for use in NBC filtration systems. Evaluations considered adsorbent bed performance under a wide range of agent challenge concentration scenarios and environmental conditions. Selected best adsorbent bed compositions. Completed DTO and transitioned efforts into the Joint Service General Purpose Mask (JSGPM) and Joint Collective Equipment Program (JCEP) programs.

Total 6227

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

DATE: **February 2005**

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

FY 2005 Planned Program:

- 772 End-of-Service-Life Indicators (ESLI) for NBC Mask Filters (DTO CB36) BCA#19 - Assess the effects of common battlespace interferents on ESLI performance. Optimize ESLI design and complete demonstration testing on ESLI filter prototype(s). Investigate new indicators (or optimize existing indicators as required) to detect sorbent depleting battlefield contaminants. This DTO will transition to the Joint Service General Purpose Mask (JSGPM) program.
- 1155 Advanced Air Purification System Model (DTO CB61) BCA#11 - Identify high priority model applications, compile user and operational requirements and initiate population of databases using data in literature, existing system performance and module models. Initiate configuration of a lab scale system to measure required design data. This DTO supports the Joint Expeditionary Collective Protection (JECP) program.
- 1151 Individual Protection, Clothing BCA#26/27 - Prepare and evaluate carbon-loaded fabric with nanofiber and/or membrane backing in wide widths suitable for fabrication into prototype garments, incorporating novel closure systems for aerosol NTA protection. Develop and evaluate the performance of a prototype intermittent Micro Climate Cooling System (MCS) vapor compression component. Develop advanced closure concepts, develop and assess conceptual models, and fabricate prototypes of best candidates. Develop swatch test technology for assessing role of wind speed in challenge penetration of Individual Protective Equipment (IPE).

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 1098 Collective Protection, Shelters BCA# 11 - Explore next generation airlock concepts focusing on improved airflow properties and ease of use features using computer modeling as well as test-bed purge testing of multiple configurations. Novel CB closures will be fabricated, tested and down-selected to the best performing concept. Initiate development of new impermeable CB resistant barrier material, starting with a front-end analysis and identification of conceptual configurations. Complete a study on the currently fielded equipment and procedures used in entry/exit of collective protection systems. Create a model of entry/exit process and run simulations documenting the effects of key variables. Perform simulant and agent testing on cloth swatches treated with self-decontaminating chemistries. Demonstrate performance of expedient coating formulations and determine permeability.
- 1344 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) BCA#11/26/27 - Demonstrate scaled-up electrospun self-detoxifying membranes. Optimize materials and processing conditions for reactive fibers/films/membranes. Select materials from DTO and related projects. Measure chemical/aerosol breakthrough of candidate fabrics. Measure durability of candidate fabrics from all sources. Conduct toxicology and live agent testing of manufactured fabrics. Select fabric design from agent and durability testing. Select overall garment design from field-testing and report findings. This DTO supports the Joint Expeditionary Collective Protection (JECP) program. This DTO also supports the current Joint Service Lightweight Integrated Suit Technology program.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 977 Individual Protection, Masks BCA#19 - Initiate and validate bio protection factor (PF) test procedures, conduct human bio-Protection Factor study, analyze data and prepare final report. Assess performance of dual sided filter concept model, develop and evaluate integration options, conduct testing to update baseline performance for concepts, and demonstrate technology and concepts for the next generation advanced mask system. Develop final technology concepts for active and passive pressurization, conduct additional unmanned and manned protection factor evaluations of all technology concepts, and develop final technology option recommendations for future mask concept development.
- 1149 Collective Protection, Air Purification BCA# 11 - Characterize and optimize performance of advance aerosol/particulate removal processes providing enhanced protection. Minimize the deleterious effects of adsorbents possessing volatile and non-volatile reactive chemicals. Develop filtration advanced air purification technology demonstrators based upon temperature swing adsorption and electrical swing adsorption approaches and integration with environmental control units. Leverage developed residual life indicator hardware and initiate chemical pulsing concepts to probe filter reactive chemistry capacity.

Total 7646

FY 2006 Planned Program:

- 500 Advanced Air Purification System Model (DTO CB61) BCA# 11- Continue identification of high priority model applications, user and operational requirements and population of databases using data in literature, existing system performance and module models. Continue configuration of lab scale system to measure required design data. This DTO supports the Joint Expeditionary Collective Protection (JECP) program.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 3000 Individual Protection, Clothing BCA# 26/27- Pursue technologies to reduce aerosol penetration of garments (e.g. nanofiber mats, high moisture vapor transport membranes, novel closures, etc.). Identify materials for glove applications that enhance tactility, durability, and protection. Evaluate the impact of Non Traditional Agents on clothing materials, components, and systems. Develop test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated clothing systems, as well as individual components.
- 3000 Collective Protection, Shelters BCA# 11- Complete airlock concepts investigations. Identify advanced textiles, seaming technology, materials and closures for use in protective enclosures for use in mobile, transportable and fixed site shelter platforms, and protective clothing. Develop shelter concepts using easily transported, erected molds and widely available indigenous materials. Initiate the development of non-toxic strippable or permanent coatings for on-demand application. Evaluate the impact of NTAs on shelters materials, components, and systems. Develop test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated shelter systems, as well as individual components.
- 1350 Individual Protection, Masks BCA# 19- Develop updated system level design goals for advanced masks, complete updated technology assessment, complete preliminary market survey and updated trade-off analysis, and initiate development of prototype models. Initiate efforts to identify advance seal technologies to enhance performance and comfort of future masks. Results will be used to transition efforts to Advanced Technology Development.

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

DATE: **February 2005**

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):

- 3112 Collective Protection, Air Purification BCA# 11- Identify broad spectrum sorbents for application in both single pass and regenerative filtration systems and pursue technologies for CO, SOx, and NOx. Evaluate the impact of NTAs on air purification materials, components, and systems. Continue to investigate chemical pulsing for filter capacity determination. Develop test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated air purification systems, as well as individual components.

Total 10962

FY 2007 Planned Program:

- 500 Advanced Air Purification System Model (DTO CB61) BCA#11 - Complete high priority model applications and population of databases using data in literature, existing system performance and module models. Complete configuration of lab scale system to measure required design data. This DTO supports the Joint Expeditionary Collective Protection (JECP) program.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 2350 Individual Protection, Clothing BCA#26/27 - Conduct system level testing of garments employing best candidate closures, and validate the performance of seals against Chemical Warfare (CW) agent . Characterize wind speed effects on entire Individual Protective Equipment (IPE) systems (including adsorbent carbon technology (JSLIST, JPACE) and advanced materials (membranes, nanofiber mats, etc.). Identify technologies to indicate the residual life, or end of life of protective garments. Fabricate test samples and evaluate candidate technologies to reduce aerosol penetration of garments (e.g. nanofiber mats, high moisture vapor transport membranes, novel closures, etc.) Initiate evaluation of materials for glove applications that enhance tactility, durability, and protection. Develop technologies to mediate the impact of NTAs on clothing materials, components, and systems. Conduct validation of test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated clothing systems, as well as individual components.
- 2876 Collective Protection, Shelters BCA#11 - Fabricate and evaluate candidate advanced textiles, seaming technology, materials and closures. Evaluate candidate shelter concepts using easily transported and erected molds and widely available indigenous materials. Assess candidate non-toxic strippable or permanent coatings for on-demand application to structures. Develop technologies to mediate the impact of NTAs on shelter materials, components, and systems. Conduct validation of test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated shelter systems, as well as individual components.
- 1250 Individual Protection, Masks BCA#19 - Complete development of advanced mask prototypes and conduct performance testing. Down-select advance seal technologies, develop proof-of-concept models and initiate evaluations.

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

DATE: **February 2005**

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):

- 3500 Collective Protection, Air Purification BCA#11 - Initiate the evaluation of broad spectrum sorbents for application in both single pass and regenerative filtration systems. Evaluate characteristics of technologies for CO, SOx, and NOx removal technologies. Develop technologies to mediate the impact of NTAs on air purification materials, components, and systems. Conduct validation of test and evaluation methodology, protocol, and/or apparatus for evaluation of fully integrated air purification systems, as well as individual components.

Total 10476

	FY 2004	FY 2005	FY 2006	FY 2007
Threat Agent Sciences	24002	31040	32810	38021

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 2003 Threat Agents - Continued to synthesize small quantities for defensive RDT&E, toxicologically screened, and characterized new threat materials and fill data gaps for established chemical and biological threat agents. Continued to characterize fundamental properties of Y. pestis. Continued characterization of fundamental properties of a viral family and initiated characterization on a second viral family selected by biodefense priorities. Completed validation studies on simulant BG spores and continued improvement of Erwinia herbicola antigenicity, exploration of novel peptide-based biological simulants, and research on a new viral simulant. Continued development of an agent simulant knowledge base technical information system with emphasis on completion of environmental database and initiated the collection and quality assessment of classified and incapacitating agent data. Loaded bioinformatics database with fundamental physical sciences properties.
- 3614 Aerosol Technology - Initiated investigations of inlets to facilitate aerosol collection in high air speed conditions. Continued experimental studies of micro high efficiency particulate air filtration (HEPA), electrostatic collector, mini-slit and other low power aerosol collection devices. Fabricated and tested breadboard aerosol collector capable of low temperature operation. Initiated and evaluated emerging collectors and collection technology. Developed new aerosol generation and analysis techniques including methodology development to generate suitable chemical simulant aerosol challenges. Completed enhanced Laser Imaging Detection and Ranging (LIDAR) aerosol test cell to support stand-off detection tests. Continued development of new methodology for quantifying biological aerosols captured in collector/concentrator characterization experiments.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 5500 Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) - Low Level Operational Toxicology Studies - Completed initial inhalation studies for the nerve agents GF and VX. Delivered a refined operational human health risk assessment for those agents suitable for integration into Operational Risk Management processes used by commanders in military settings. Evaluated the utility of diverse non-human data for extrapolation to human conditions based on a common dosimetric.
- 1690 Environmental Fate of Agent (DTO CB42) - Predictive Modeling - Developed evaporation and liquid contact models and integrated into the Joint Effects Model (JEM). Expanded surface evaporation database to include all agent/simulant data from large area surfaces and continually added data generated from the Agent Fate program. Expanded the features and accuracy of Chemical Hazard Estimation Method and Risk Assessment Tool (CHEMRAT) by including current data from the Agent Fate program to support Operation Iraqi Freedom and future military operations. Calibrated Vapor Liquid Solid Tracking (VLSTRACK) model by adjusting parameters relevant to secondary evaporation to provide better vapor hazard and liquid persistence estimates. Enhanced SRFSIM and SURFIT assessment tools by including secondary evaporation methodology from the Hazard Prediction Assessment Capability (HPAC) model. Performed sensitivity analysis of HPAC 4.0.3 secondary evaporation methodology.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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

FY 2004 Accomplishments (Cont):

- 3365 Threat Agents and Simulants - Continued 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. Completed investigations of physical and decontamination properties of B. anthracis. Investigated physical properties and decontamination properties of Erwinia herbicola and baculovirus. Continued update of classified Agent Simulant Knowledge (ASK) databases and provided to Chemical and Biological Information Analysis Center (CBIAC) when completed. Continued effort to identify and validate non-pathogenic antigen mimics. Completed methodology development for assessing inhalation toxicity of non-traditional agents (NTAs).
- 4330 Environmental Fate of Agents (DTO CB42) - Large-Scale and Lab-Scale Wind Tunnel Studies - Initiated investigations of nerve agent (VX) and NTAs on asphalt. Initiated surface evaporation of thickened nerve agents (GD, VX) and blister agent (HD) on concrete and asphalt. Completed fabrication and certification of large scale wind tunnel in the UK.
- 2440 Biological Agent Fate - Initiated an accelerated all-source compilation and analysis of existing literature data that addresses the persistence of biological warfare agents released into the operational environment. Conducted a state of current research expert workshop in conjunction with NATO/allied investigators to document research efforts in the fate of biological agents. Delivered a documented assessment of identified data gaps and produced a targeted Defense Technology Objective (DTO) research program.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 1060 Environmental Fate of Agents (DTO CB42) - Methodology Development - Determined degradation products of agents on surfaces of interest such as concrete. Using high speed solid phase microextraction (HS-SPME), measured and correlated nerve agents (VX, GD) and blister agent (HD) on Czech concrete vs. NIST standard concrete. Using HS-SPME, measured VX, GD, and HD on asphalt, soil and metal/glass at three humidity levels and compared single vs. multiple droplets surface contamination. Initiated HS-SPME measurements of NTAs. Initiated soil methodology development and determined sorption and fate of GD on dry sand and its response to simulated rainfall. Determined the fate of RVX, NTA, and HD on concrete by Nuclear Magnetic Resonance (NMR).

Total 24002

FY 2005 Planned Program:

- 3932 Threat Agents and Simulants - Continue and expand efforts to determine and validate new synthesis targets. Continue to fill data gaps relative to classical and novel threat agents, toxic industrial chemicals, and CW agent simulants. Continue to catalog agent properties in searchable database. Continue investigations of inhalation toxicity of NTAs.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 2918 Biological-Threat Agents - Continue to synthesize small quantities for defensive RDT&E, toxicologically screen, and characterize identified new threat materials and fill identified data gaps for established biological threat agents. Continue to characterize fundamental properties of Y. pestis and initiate work on B. mallei. Complete characterization of fundamental properties of a viral family and continue characterization of a second viral family selected by biodefense priorities. Complete improvement of Erwinia herbicola antigenicity, and continue exploration of novel peptide-based bio simulants and research on a new viral simulant. Continue upgrading the data in the agent/simulant knowledge base technical information system and initiate the collection and quality assessment of toxicology data. Investigate physical properties and decontamination properties of B. mallei and baculovirus.
- 2041 Aerosol Technology - Continue investigations of approaches to advanced inlets for aerosol collection in high air speed conditions. Continue experimental studies of novel collectors, electrostatic collector, impeller, mini-slit, and other low power aerosol collection devices. Continue characterization of emerging collectors and collection technology. Upgrade existing chambers and wind tunnels. Continue evaluations of new and prototype chemical detectors using chemical simulant aerosols. Continue computational fluid dynamics (CFD) modeling for the windbreak approach of sampling from high speed flows.

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DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 3598 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Predictive Modeling - Evaluate Agent Fate secondary evaporation model versus the Vapor Liquid Solid Tracking (VLSTRACK) module and evaluate each with agent lab trials to determine accuracy of downwind vapor predictions. Tune model/module and integrate into Joint Effects Model (JEM). Complete agent/inert substrate prediction model from lab-scaled wind tunnel data. Continue to work the scaling of agent vapor concentrations from laboratory to outdoor test conditions. Continue chemical hazard estimation method and risk assessment tool (CHEMRAT) update with new agent fate test data. Continue to update secondary evaporation model with new agent fate test data and incorporate into JEM.
- 2800 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Methodology Development - Determine degradation products of agents on surfaces of interest such as concrete. Examine the fate of nerve agents (VX, GD) and non-traditional agents (NTAs) on asphalt by nuclear magnetic resonance (NMR). Examine the fate of V analogs, NTAs and thickened agents on surfaces under different temperature and humidity conditions by HS-SPME. Determine sorption and fate of nerve agent (VX) on sand and clay soil. Determine sorption and fate of nerve agents (GD, VX) on assembled test soil.
- 8551 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Lab/Large-Scale Wind Tunnel Studies - Continue surface residual agent testing to determine contamination levels. Complete surface evaporation tests of nerve agents (VX, GD) and blister agent (HD) on a non-porous substrate. Start surface evaporation testing of thickened CW agents on soil, asphalt and concrete.
- 500 Modeling and Simulation - Complete and transition agent/inert substrate prediction module to Joint Operational Effects Federation (JOEF) and JEM.

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DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 5500 Low Level Chemical Warfare Agent Exposure Effects and Countermeasures (DTO CB51) - Low Level Operational Toxicology Studies - Conduct 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. Extend the useful range of prediction for inhalation exposures to nerve agent (GF) expected in various military response settings. Initiate nerve agent (VX) studies that extend time-effect predictive capability.
- 1200 Biological Agent Fate - Continue assessments of the persistence of biological warfare agents if released into operational environments.

Total 31040

FY 2006 Planned Program:

- 1650 Threat Agents and Simulants - Continue to synthesize small quantities for defensive RDT&E, toxicologically screen, and characterize new threat agents and fill data gaps for established chemical and biological threat agents. Complete characterization of the fundamental properties of Y. pestis and continue work on B. mallei. Initiate new efforts to identify CB simulants and catalog data.
- 3400 Aerosol Technology - Continue investigations of approaches to advanced inlets for aerosol collection in high air speed conditions. Continue experimental studies of novel collectors.
- 1240 Biological Agent Fate - Continue assessments of the persistence of biological warfare agents if released into operational environments.
- 2520 Agent Chemistry - Initiate efforts to characterize the chemical and physical properties of emerging threat agents.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 8865 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Lab/Large-Scale Wind Tunnel Studies - Complete measurements of large scale and outdoor test data for original test matrix. Complete validation tests of surface evaporation model for agents on surfaces. Complete and document surface residual agent testing. Complete surface evaporation tests of nerve agents (VX, GD) and blister agent (HD) on concrete, asphalt, grass, and soil. Complete measurement of surface evaporation of thickened HD, GD and VX on asphalt and concrete.
- 3735 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Predictive Modeling - Complete secondary evaporation models and conduct predictions of field trials. Transition updates into Joint Effects Model (JEM) and Joint Operational Effects Federation (JOEF).
- 2900 Environmental Fate of Agents (DTO CB42) BCA#5/6/23/28/39 - Methodology Development - Complete studies to determine degradation products of agents on surfaces of interest such as concrete, asphalt, grass, and soil.
- 6500 Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO CB51) - Low Level Operational Toxicology Studies - Complete nerve agents (VX) studies that define longer-time, lower-level operational effects. 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.
- 800 Inhalation Exposure Study - Implement development of technically challenging inhalation exposure studies for selected very low volatile chemical threat agents, such as non-traditional threat agents (NTAs).
- 1200 Percutaneous Hazard Study - Conduct studies that characterize the threat of percutaneous hazards from operational exposure to selected chemical warfare agents and non-traditional threat agents. (NTAs)

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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):
Total 32810

FY 2007 Planned Program:

- 12143 Threat Agents and Simulants - Continue to synthesize small quantities for defensive RDT&E, toxicologically screen, and characterize identified new threat materials and fill identified data gaps for established chemical and biological threat agents. Complete characterization of the fundamental properties of Y. pestis and continue work on B. mallei. Initiate new efforts to identify CB simulants and catalog data.
- 2100 Aerosol Technology - Continue investigations of approaches to advanced inlets for aerosol collection in high air speed conditions. Continue experimental studies of novel collectors.
- 5640 Biological Agent Fate - Continue assessments of the persistence of biological warfare agents if released into operational environments.
- 5000 Chemical Agent Fate - Initiate effort to gather agent fate data for emerging threat agents and surfaces of interest.
- 5500 Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO CB51) - Low Level Operational Toxicology Studies - Initiate and complete inhalation studies that characterize the extended time, low level respiratory exposures to blister agent (HD). Deliver refined human health risk assessment for blister agent (HD) inhalation exposures suitable for incorporation into Operational Risk Management processes.
- 2438 Inhalation Hazard - Continue development of technically demanding inhalation exposure methods for selected very low volatile chemical threat agents, such as non-traditional threat agents (NTA).

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

FY 2007 Planned Program (Cont):

- 5200 Agent Hazards - Initiate Defense Technology Research program to address the operational risk to military personnel when exposed to selected traditional chemical warfare agents as well as non-traditional threat agents by contact and inhalation routes.

Total 38021

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	38558	0	0

FY 2005 Planned Program:

- 992 Agent Detection and Neutralization System (AFSOC) - Evaluate 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.

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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 Planned Program (Cont):

- 2479 CBRN Countermeasures - Conduct research that focuses on human exposures to bacterial/viral/toxin agents, chemical warfare agents or toxic industrial chemicals, or radioisotopes from aerosol releases associated with terrorist incidents in urban and near-urban environments. Concentrate efforts that expand the knowledge, tools, models, and strategies necessary to protect against WMD. Conduct laboratory studies of cell type-specific, cytotoxic effects and mechanism of lethality for biomedical applications; conduct dispersion modeling, exposure estimation, and risk assessment of aerosol releases for in-door and ambient environments for threat characterization; develop model emergency medical systems for responsiveness to terrorist incidents as part of consequence management; and assess social psychological/psychiatric dimensions of behavioral dynamics to prevent or respond to terrorism.
- 2157 Chemical Agent Persistence Models - Conduct 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 - Develop a front-end to allow the sample collection and process to increase the performance of existing detection technologies.
- 992 Integrated Biodefense Research
- 1488 Low-cost Automated Gas Chromatograph/Flame Photometric Detector System - Develop an inexpensive chemical agent detector based on gas chromatograph and atomic emission spectroscopy from chemical agents.
- 1488 Systems for Sampling and Detecting Bioaerosols - Develop 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

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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 Planned Program (Cont):

- 992 Air Contamination Monitoring System - South Coast Air Quality Management District (SCAQMD) - Develop and validate concepts of operation for the protection of high value/visible domestic facilities, i.e. sports arena. Provide sufficient equipment to support and demonstrate the concepts of operation.
- 1488 Biological-Chemical Vaporous Hydrogen Peroxide Decontamination for Military Aircraft and Equipment - Validate the adaptation of biological-chemical vaporous hydrogen peroxide in performing fast and effective decontamination of military aircraft.
- 3719 Chemical-Biological Protective Suit Membrane Research - Continue optimization of membrane materials to increase moisture vapor transport and durability and to reduce chemical warfare agent permeation. Fabricate optimized membrane into candidate fabric systems for further evaluation. Conduct laboratory evaluations of candidate fabric systems.
- 3471 Chemical Imaging for Food and Water Safety - Develop an imaging capability based on Raman spectroscopy to detect biological contaminants in food and water.
- 992 Early Warning and Detection Program - Develop new point sensors based on surface enhanced Raman using semi-metallic oxides materials to detect the biological materials.
- 1289 Future Force Warrior-Nano Wire Mesh Fabrics for Chemical-Biological Agent 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.

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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 Planned Program (Cont):

- 3719 Low Cost Chemical-Biological Protective Shelter Development - 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.
- 4166 Love Shear Horizontal Surface Acoustic Wave (LSH-SAW) Hand-held Biosensor - Develop a light-weight handheld biological sensor based on the use of antibodies supported on quartz resonators.
- 992 Remote Optical Sensing Program - Develop new optical components base on semi-metallic oxide materials to replace conventional mechanic components currently used in detector systems.
- 992 Research on a Molecular Approach to Hazardous Materials Decontamination - Conduct research into the use of multi-phase systems for decontamination. Evaluate the combinations of agent/surfactant/water and agent/solid/surfactant/water.
- 1190 Technology for the Protection of Air and Water Systems - Develop technology to detect the presence of chemical and biological contaminants in water.
- 1984 Zumwalt Program for Countermeasures to Biological and Chemical Threats - Develop new models and sensor systems for the detection and identification of chemical and biological hazardous materials.
- 1984 Real Time Non-Specific Viral Agent Detection - Develop and publish the operating protocols for at least four non-enveloped viruses from naturally occurring sources using the VDSC-1 virus detection technology.

Total 38558

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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 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	847	0	0

FY 2005 Planned Program:

- 847 SBIR

Total 847

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	88011	92075	60787	76897	70670	73260	66155	54853	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
TT3 TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	Cont	Cont

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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**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	44784	43678	61654	42401	35344	29153	31017	31606	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 biotechnological 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 #15 (Medical Prophylaxes - Lack of prophylaxes for chem warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes), 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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RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Diagnostics	4068	4087	11425	10171

FY 2004 Accomplishments:

- 2468 Diagnostic Technologies - Continued to apply new diagnostic approaches directed toward early recognition of infection, selecting technologies that can be adapted to current and future comprehensive integrated diagnostic systems. Continued laboratory and field studies using relevant clinical samples to apply new technological approaches for diagnosis of potential biological warfare threat agents. Continued to apply new technological approaches for concentrating and processing clinical samples to support rapid agent identification and to apply research reagents and associated assays for the detection of appropriate biological markers using relevant clinical samples.
- 1600 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Developed laboratory-based test and evaluation standards for comparing similar diagnostic/detection assays and reagents. Elevated assays, previously handed off to advanced development, to consistent test and evaluation standards and prepared technical data packages for these assays/reagents.

Total 4068

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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 Planned Program:

- 2487 Diagnostic Technologies - Focus on multiplexing nucleic acid and immunoassays for the detection of identified threat agents in clinical samples. Invest in improving and multiplexing existing assays, as new genomic data and techniques become available. Investigate recombinant DNA technologies for immunodiagnostic reagent production. Pursue toxin diagnostics. Coordinate pursuit of diagnostic approaches to the early recognition of infections and the evaluation of systems compatible with future comprehensive integrated diagnostics. Test developed assays, reagents and sample preparation techniques and platforms in field studies. Investigate the use of proteomics to develop immunologic assays for pathogen detection. Investigate novel pathogen detection systems. Analyze clinical samples obtained from human vaccines receiving biodefense vaccines to evaluate host responses to the immunizations
- 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 standards established during FY04.

Total 4087

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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:

- 6925 Diagnostic Technologies - Continue to develop/multiplex nucleic acid and immunoassays for the detection of identified threat agents in clinical samples. Invest in improving and multiplexing existing assays, as new genomic data and techniques become available. Pursue using recombinant DNA technologies for immunodiagnostic reagent production. Develop gene sets correlating host immune response with exposure to endemic pathogens/threat agents. Test on existing molecular diagnostic platforms. Evaluate systems compatible with future comprehensive integrated diagnostics. Continue to test developed assays, reagents and sample preparation techniques and platforms in field studies. Complete evaluation of new chemistries for identifying biological warfare agents. Apply proteomics finding to the development of immunologic assays for pathogen detection. Accelerate development of alternate sampling/extraction techniques (e.g., address Joint Biological Agent Identification and Diagnostic System (JBAIDS) Block I gap in sample processing and RNA extraction). Address gaps in assay development; assess novel technologies suitable for complete threat characterization; use results to develop more specific diagnostic assays adaptable to existing/future hand held and reference lab systems. Continue to assess components of future comprehensive integrated diagnostic system suitable to both hand held and reference laboratory confirmatory testing. Conduct a market survey to determine the present state of commercial development of systems compatible with future comprehensive integrated hand held diagnostic system; determine capability area investment strategy with tri-service partners; choose those technologies suitable for further development. Perform multi-center trial of automated sample processing technologies
- 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.

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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 (Cont):

- 3000 Multiagent (Broad Spectrum) Medical Countermeasures - Develop massively parallel microfluidics techniques for analyzing protein signatures at submicromolar levels in physiological fluids using nanotechnology advances (nanowires coated with antibody or aptamer conjugates) to monitor pathogen / host pathogenesis pathway expression products.

Total 11425

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

FY 2007 Planned Program:

- 8571 Diagnostic Technologies - Continue to develop/multiplex nucleic acid and immunoassays for the detection of identified threat agents in clinical samples. Invest in improving and multiplexing existing assays, as new genomic data and techniques become available. Pursue using recombinant DNA technologies for immunodiagnostic reagent production. Continue to develop gene sets for different organisms and types of infections, as they become available, that characterize early recognition of infections. Test these gene sets on new and existing molecular diagnostic platforms. Identify and test systems compatible with future comprehensive integrated diagnostics. Continue to test developed assays, reagents and sample preparation techniques and platforms in field studies. Test systems utilizing new chemistries for the identification of biological warfare agents. Utilize proteomics data to develop and test assays for pathogen detection. Analyze findings and collate data from clinical samples obtained from human vaccines receiving biodefense vaccines to evaluate host responses to the immunizations. Invest in further development of technologies compatible with a comprehensive integrated hand held diagnostic system; direct efforts at adapting to military use. Continue to assess components of future comprehensive integrated diagnostic system suitable to both hand held and reference laboratory confirmatory testing. Complete assessment of technologies suitable for complete threat characterization; apply results to develop more specific diagnostic assays adaptable to hand held and reference lab systems.
- 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.

Total 10171

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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 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	0	0	1726	5759

FY 2006 Planned Program:

- 526 Genetically Engineered Threats - Conduct determination of spore germination inhibitors and their effectiveness.
- 1200 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 genetic 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. Sequence 6 B. anthracis group genomes; release data to other relevant DOD projects. Demonstrate and evaluate two high-density microarray systems. Develop, implement data analysis pipeline.

Total 1726

FY 2007 Planned Program:

- 4359 Genetically Engineered Threats - Initiate broad array of studies on discovery and characterization of genetic elements of pathogenicity and virulence. Divide these studies into three broad areas: toxin virulence factors, broad spectrum anti-viral compounds and common pathways of virulence.

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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 2007 Planned Program (Cont):

- 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 high-throughput microarray-based resequencing. Resequence 10 B. anthracis and 10 Y. pestis group genomes; release data to other relevant DOD projects. Expand biothreat agent collection. Evaluate microarray feature size reduction/increased density on two platforms.

Total 5759

	FY 2004	FY 2005	FY 2006	FY 2007
Medical Biological Warfare Defense	5370	0	0	0

FY 2004 Accomplishments:

- 2426 Medical Biological Warfare Defense, Vaccines and Therapeutics to Counter Biothreats - Conducted applied research to develop vaccines and therapeutics to counter BW threat agents.
- 2039 Medical Biological Warfare Defense, Advanced Emergency Medical Response - Conducted applied research toward development of advanced emergency medical response capabilities.
- 905 Medical Biological Warfare Defense, Advanced - Conducted research on the treatment of late stage biological weapon and battle wound related sepsis by removal of extracorporeal mediators.

Total 5370

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

	FY 2004	FY 2005	FY 2006	FY 2007
Pretreatments	19668	7140	18044	14064

FY 2004 Accomplishments:

- 3664 Vaccines, Bacterial - Completed the evaluation of potential subunit and live-attenuated glanders vaccine candidates in small animal models and prepared a technical data package summarizing the glanders vaccine research program. Performed preliminary studies toward development of an acellular brucella vaccine candidate. Continued to perform in vitro (inside a test tube) and in vivo (inside the organism) studies to support advanced development of the rPA vaccine candidate.
- 1533 Vaccines, Toxin - Initiated studies on the ability of intact catalytic and translocation domains of botulinum neurotoxins (BoNT) to elicit protective immunity in animal models. Initiated studies to increase immunogenicity of recombinant BoNT heavy chain (Hc) subunit vaccine candidates by varying adjuvant and/or method of delivery. Continued developing in-process and release assays for recombinant BoNT Hc vaccine candidates. Qualified in vivo and in vitro concept model systems for assessment of recombinant ricin vaccine candidate efficacy and surrogate endpoints of human clinical efficacy.
- 473 Vaccines, Viral - Investigated the use of the oligonucleotide CpG as an adjuvant with live attenuated alphavirus vaccine candidates to determine their effect on immunity conferred by the vaccines.
- 500 Vaccines, Viral, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - Initiated applied research to define correlates of immunity that protect against disease from alphaviruses (EEE and WEE viruses). Developed DNA and replicon-based vaccine constructs/platforms as western and eastern equine encephalitis (WEE/EEE) vaccine candidates.

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

FY 2004 Accomplishments (Cont):

- 1100 Vaccines, Viral, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Initiated development of animal models of aerosol infection with filoviruses. Initiated applied research to define correlates of immunity that protect against disease from filoviruses. Developed animal models for Ebola-Sudan virus. Conducted preliminary characterization of leading vaccine candidates.
- 1941 Vaccines, Needle-less Delivery Methods for Vaccines - Examined the potential for intradermal (ID) delivery to provide antigen dose-sparing benefits, faster seroconversion, and reduction or elimination of alum. Examined the safety and immunogenicity of the ID delivery of the anthrax rPA with or without alum adjuvant. Compared intramuscular (IM) injection with standard needles. Pursued further development of formulation technologies for rPA and rSEB providing improved shelf-life stability. Developed and test rapidly reconstituting rPA powders and systems for ID delivery in mouse challenge studies. Identified rapidly reconstituting formulations and delivery systems for the rSEB vaccine candidate.
- 8272 Vaccines, Viral, Multivalent Ebola, Marburg Filovirus Program - Developed a multivalent vaccine platform capable of inducing potent humoral and cellular immune responses against two strains of Ebola viruses (bivalent) and three strains of Marburg viruses (trivalent) for biodefense.
- 971 Vaccines, Bacterial, Oral Anthrax and Plague Vaccine - Developed an oral combination vaccine against anthrax and plague using proprietary technology for attenuated live bacterial vaccines. Supported preclinical animal testing of vaccine constructs developed for the oral combination vaccine against anthrax and plague.
- 1214 Vaccines, Bacterial, Novel Pharmaceuticals for Anthrax - Developed the Helinz-treated vaccine platform, with application in both cancer and infectious disease, including those agents that pose threats to bioterrorism.

Total 19668

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

FY 2005 Planned Program:

- 500 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Equine Encephalitis Vaccine (DTO CB58) - Continue to analyze mutants with various engineered attenuating mutations to determine their suitability for use as vaccine platforms. Enhance 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) - Incorporate antigen targets from earlier studies to improve vaccine candidates as determined from characterization studies and concurrent testing.
- 5940 Vaccine Research Support - Continue to develop lead vaccine candidates against plague (F1-V fusion antigen vaccine) and ricin. Evaluate the role of capsule in the development of a generation-after-next anthrax vaccine. Investigate anthrax spore interactions with host cells and characterization of diverse B. anthracis strains for vaccine resistance. Continue studies on the ability of functional domains of botulinum neurotoxins (BoNT) to elicit protective immunity in animal models. Accelerate studies to increase immunogenicity of existing recombinant BoNT heavy chains (Hc) subunit vaccine candidates via adjuvants and/or method of delivery. Develop in-process and release assays for recombinant BoNT Hc vaccine candidates. Test recombinant ricin vaccine (rRTA) candidate stability. Develop surrogate endpoints of clinical efficacy for higher animal species in ricin vaccine adjuvant studies. Test novel adjuvants with lead ricin vaccine candidate. Determine stability of Staphylococcal Enterotoxin (SE) vaccine candidates. Test oligonucleotide CpG as an adjuvant with live attenuated alphavirus vaccine candidates. Complete studies on correlates of immunity that protect against disease from filoviruses and alphaviruses. Evaluate the use of Virus-Like Particles (VLP) as antigen for vaccines for filoviruses. Begin evaluation of a VEE replicon-based Marburg virus vaccine candidate.

Total 7140

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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.
- 2500 Multiagent Vaccines, Multi-agent (molecular) Vaccines for Bio-Warfare Agents (DTO CB65) - Develop a trivalent vaccine based on a prototype anthrax/plague vaccine. Explore both molecular and protein-based trivalent vaccine platforms. Develop the optimal backbone in combination with adjuvant formulation. Identify third pathogen to be targeted as the third component of the trivalent vaccine and initiate candidate antigen incorporation into a candidate vaccine.
- 3600 Animal Models - Develop definitive non-human primate model to evaluate the efficacy of separate and a combined VEE/WEE/EEE vaccine candidates (Venezuelan, Eastern and Western equine encephalitis virus, respectively). Develop final technology data package for the F1/V-fusion protein vaccine for Milestone B decision in FY06.
- 3000 Resuscitative Intervention - Accelerate the construction and evaluation of VEE/WEE/EEE vaccine candidate constructs in various delivery platforms. Start down-selection phase of filoviral vaccine candidate constructs and evaluate alternative forms of delivery for comparative evaluation of vaccine efficacy. Evaluate a recombinant protein multiagent (trivalent) vaccine that combines protection against anthrax, plague, and one additional target biothreat agent (e.g. ricin, Botulinum neurotoxin or poxvirus) using currently identified protective antigens for each pathogen. Test novel adjuvants designed to enhance the efficacy of genetic vaccines in non-human primates (e.g. toll-like receptor response, cationic antimicrobial peptides, etc.). Accelerate the development and design of generic gene-based vaccines targeting common target sequences in pathogens.

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

FY 2006 Planned Program (Cont):

- 2000 Multiagent (Broad Spectrum) Medical Countermeasures - Develop multiagent vaccines with the attendant adjuvant and delivery systems that ensure rapid host immunity development.
- 6444 Vaccine Research Support - Initiate the evaluation of intracellular pathogen candidate antigens using animal model systems including the use of alternative delivery platforms. Continue support studies for F1-V and rPA candidate vaccines in phase 1 studies. 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 anthrax and plague vaccine development. 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. Analyze WEE/EEE mutants with various engineered attenuating mutations. Evaluate target antigens for Ebola virus vaccine development. Explore additional use of VLP as antigen delivery platform for filovirus vaccine development. Continue the evaluation of a VEE replicon-based Marburg virus vaccine platform.

Total 18044

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DATE: **February 2005**

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:

- 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 NHP efficacy of multiagent viral vaccine candidates. Develop a FDA-licensed 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) - Evaluate selected target antigens in various vaccine platform systems for immunogenicity and protective efficacy. Characterize the underlying protective response and evaluate for possible interference phenomena. Begin scale-up process development evaluation. Conduct a comparative analysis of genomic and recombinant vaccine candidates.
- 300 Multiagent Vaccines - 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.
- 3600 Animal Models - Conduct dose and antigen interference studies for the combined VEE/WEE/EEE vaccine in the definitive animal model. Evaluate incorporation of recombinant lethal factor from B. anthracis into an anthrax vaccine candidate for a multiagent vaccine approach.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**
	PROJECT **TB2**

FY 2007 Planned Program (Cont):

- 2500 Resuscitative Intervention - Evaluate novel delivery systems for enhanced vaccine delivery and efficacy in support of the rapid development of multiagent vaccines. Accelerate the development and design of generic DNA gene-based vaccines targeting common target virulence sequences in pathogens.
- 3664 Vaccine Research Support - Initiate efficacy studies through animal challenge models. Explore additional intracellular pathogen target antigens using animal model systems including the use of alternative delivery platforms. Expand support studies for F1-V candidate vaccine in phase 1 studies. Accelerate B and T cell epitope mapping of lead protective antigen candidates. Select novel antigen targets for next generation anthrax and plague vaccine development. Test next generation 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. Refine applied research to define correlates of immunity that protect against disease from filoviruses and alphaviruses. Continue to conduct studies of recombinant Ebola vaccine candidates. Expand evaluation of alphavirus candidate vaccines for efficacy. Evaluate vaccine performance requirements (vaccine dose, route, number of immunizations, etc.) in animal models. Apply the use of VLP as antigen carriers for vaccines against filoviruses. Finalize the evaluation of a VEE replicon-based Marburg virus vaccine candidate.
- 1000 Vaccine Technology Development - Develop genetic immunization platforms as a multiagent anthrax-plague vaccine strategy and their animal efficacy studies. Begin evaluation of Bacillus generic molecular vaccine efficacy in animal models. Expand alternative immunization platforms such as VLP, VEE replicons and adenoviral constructs for efficacy against selected biothreat pathogens and/or toxins.

Total 14064

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	15678	10594	30459	12407

FY 2004 Accomplishments:

- 559 Therapeutics, Bacterial - Performed additional in vivo studies on efficacy of selected antimicrobial compounds against various bacterial threat agents in small animal models. Initiated studies of selected Food and Drug Administration (FDA)-licensed antibiotics to support consideration for changing label indications against biological warfare (BW) threat agents.
- 1456 Therapeutics, Toxin - Initiated testing of lead inhibitors of SE using in vivo model systems for assessment of therapeutic efficacy. Standardized in vivo model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy.
- 596 Therapeutics, Viral - Developed fluorescent-based methods for high-throughput screening for antiviral efficacy and cellular toxicity. Continued research to identify pharmacological compounds provided by industry that may intervene in filovirus-induced shock. Continued the assessment of the therapeutic action of compounds in mouse models of filovirus infection. Completed research for development of a variola animal model at CDC.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

- 2500 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Continued preclinical virology studies (including animal efficacy studies) required for a supplemental New Drug Application for cidofovir and provided technical data and support to the drug license holder. Compared the variola animal model to the monkeypox animal model and human monkeypox to qualify models to be proposed under the FDA animal efficacy rule. Initiated development of an oral prodrug of cidofovir.
- 3900 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Investigated recombinant human antibodies as passive immunotherapeutics. Synthesized 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.
- 1900 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Developed assays, methodologies, and drug formulations or prodrugs for analysis. Evaluated monoclonal antibodies to viral specific proteins for their ability to neutralize virus. Identified critical host-cell proteins integral to viral replication, viral budding, or viral entry. Generated Ebola virus VP40 and GP mutant constructs as well as a tetra cysteine-fusion of VP40 in mammalian and bacterial expression vectors.
- 971 Therapeutics, Heteropolymer Monoclonal Antibody-Based Technology - Produced and purified milligram quantities of H25 antibody for a 4-liter scale spinner production. Determined functional and biophysical properties of the purified antibody. Confirmed the utility and acceptability of the antibody produced from the cell lines for further product development. Developed analytical transfer methods and assays for monoclonal antibodies (MAbs) and heteropolymers (HPs) and conducted animal studies.

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

FY 2004 Accomplishments (Cont):

- 971 Therapeutics, Bacterial, Heteropolymer Technologies for Anthrax Immunity - Evaluated protective efficacy in rabbits exposed to lethal doses of aerosolized anthrax using the proprietary anthrax antibody, ETI-204. Assessed the level of bacteremia in treated versus untreated animals.
- 2825 Therapeutics, Bacterial, Rapid Antibody-Based Biological Countermeasures - Developed diagnostic and therapeutic antibodies against anthrax and identified new targets associated with anthrax and plague pathology. Identified additional targets associated with anthrax and plague virulence and screen for novel antibodies to detect and protect against related bioweapons. Discovered novel, validated protein targets. Developed diagnostic antibodies optimized for affinity and selectivity to biowarfare agents. Created a collection of human therapeutic antibodies for passive immunity protection against bioweapons and more effective treatment against pathogens and toxins.

Total 15678

FY 2005 Planned Program:

- 1383 Therapeutics, Bacterial - Perform therapeutic efficacy studies in non-human primate models. Continue studies on selected FDA-licensed antimicrobial compounds to support consideration for changing label indications for use against Biological Warfare (BW) threat agents.
- 2735 Therapeutics, Toxin - Develop surrogate endpoints of human clinical efficacy for Staphylococcal Enterotoxin (SE) therapeutics.
- 576 Therapeutics, Viral - Assess therapeutic action of pharmacological compounds provided by industry in mouse and non-human primate models of filovirus infection.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 2400 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Complete studies to evaluate drug efficacy of IV cidofovir in primate models that support the Food and Drug Administration (FDA) Animal Efficacy Rule. Evaluate activity in monkeypox primate animal model. Continue evaluation of oral prodrug of cidofovir to determine if it is a replacement for IV cidofovir. Identify new molecular targets and develop assays specific for those targets. Evaluate 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 vial DNA polymerase. Identify and test leading antivirals in appropriate animal models. Identify potential mediators of shock or toxemia and determine the basis for the pathogenesis of shock or toxemia in animal models.
- 2500 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Investigate recombinant human antibodies as passive immunotherapeutics. Synthesize structural analogs of active-site inhibitors identified by high-throughput screening. Identify candidate BoNT receptor antagonists as therapeutic candidates. Establish a central database and compound repository. Initiate ex vivo evaluation of lead compounds in model systems for therapeutic efficacy. Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for botulinum intoxication.
- 1000 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Generate mutant Marburg virus proteins and evaluate their ability to interact with other Marburg virus proteins. Develop information on characteristics distinguishing protective and nonprotective monoclonal antibodies.

Total 10594

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

DATE: **February 2005**

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:

- 2220 Therapeutics, Bacterial - Test Antibacterial cytokine-based therapeutic candidates. Test CpG motifs (stimulators of immune response) in conjunction with antibiotics for plaque 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.
- 4220 Therapeutics, Toxin - Develop formulations or prodrugs to overcome problems with metabolism, bioavalibility 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.
- 2219 Therapeutics, Viral - 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 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005

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):

- 1000 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Develop lead mixtures of human antibodies against BoNT as passive immunotherapeutics in vivo. Complete in vitro testing of combinations of monoclonal antibodies against multiple Botulinum Neurotoxin (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.
- 500 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Identify the structural requirements of the filoviral proteins that are essential for their function. Identify structure/function relationships that are essential for the virion formation and host cell interactions. Determine previously unsolved 3D structures of filoviral proteins and filoviral proteins in complex with host cell proteins. Refine (energetic and hydropathic) crystallographic coordinates, and or the generate sequence based homology models of identified targets. Apply bioinformatics, chemoinformatics and molecular modeling tools to further optimize lead therapeutic compounds.

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

DATE: **February 2005**

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):

- 5500 Resuscitative Intervention - Develop combined injury animal model (trauma and Biological Warfare (BW)/Chemical Warfare (CW) agent) for 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.
- 13000 Multiagent (Broad Spectrum) Medical Countermeasures - 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. Develop 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.

Total 30459

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

DATE: **February 2005**

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:

- 1250 Therapeutics, Bacterial - Refine conceptual development and execute in vivo testing of innate immunity modulator therapeutic approaches, focusing on CpG-based countermeasures against plague/anthrax. Develop and refine resuscitative technologies that integrate established and emerging bacterial therapeutic modalities into suitable candidate therapies in humans.
- 4000 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. Develop and refine additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans.
- 2857 Therapeutics, Viral - Optimize leading antivirals in appropriate animal models. 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 animal efficacy rule. Develop and refine additional 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) - Complete studies to evaluate drug efficacy in primate models that support the FDA Animal Efficacy Rule. Compile technical data to provide to the commercial partner to support consideration of the drug candidate for licensure for use as an oral smallpox therapeutic.

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

DATE: **February 2005**

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 (Cont):

- 2500 Resuscitative Intervention - Complete combined injury animal model (trauma and BW/CW agent) for a vapor nerve agent, a low-volatility nerve agent, and a particulate chemical agent threat. Evaluate Commercial off the Shelf (COTS)/Government off the Shelf (GOTS) medical status monitors against BW/CW agent exposure in combined injury model and complete early markers via genomic or proteomic analysis, and physiologic status of interactive effects of combined injury in appropriate animal model. Continue collaboration with DARPA-funded collaborators on ex vivo and in silico methods to model immune system function. Evaluate anti-sense molecules against multiple pox virus threats to determine potential for broad protection against engineered pox vector.

Total 12407

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	21523	0	0

FY 2005 Planned Program:

- 3868 Alternative Delivery Methods for Recombinant Protein Vaccines -
- 1389 Biological Counter-measures (RABB-C) -
- 992 BioTerNet Networking and Strain Tracking - Create a networked system allowing identification and tracking of biological agents and quickly disseminated information about strains.
- 992 Genetic Reassortment by Mismatched Repair-enhanced Acute Biowarfare Therapy Program -

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 1785 Heat Shock Protein Rapid Vaccine -
- 992 Heteropolymar Anthrax Monoclonal Antibody - Conduct proof-of-principle studies of novel heteroduplex antibody molecule against anthrax virulence molecules to determine efficacy and develop data packages for product licensure.
- 1091 Multi-purpose Biodefense Immunoarray - Develop a tool for flexible, rapid characterization of new and novel pathogens and expedited development of countermeasures.
- 992 Neurotoxin Mitigation Research -
- 2777 Novel Viral Biowarfare Agent ID and Treatment - Develop a radically novel approach to anti-viral therapeutics based an a revolutionary new discovery they have made about the molecular biology of viral capsid formation.
- 2777 Vaccines and Therapeutics to Counter Biological Threats - Continue to explore efficacy of mucosally-delivered vaccine candidates to bacterial and viral pathogens.
- 1389 Global Pathogen Portal - Populate a pathogen database and establish a pathogen portal, through genomic data gathering, pathogen background information curation and develpment and incorporation of new analysis tools for microarray and proteomics analysis
- 2479 Virginia Bioinformatic Institute -

Total 21523

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

DATE: **February 2005**

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

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

PROJECT: **TB2**

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	334	0	0

FY 2005 Planned Program:

- 334 SBIR

Total 334

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	44353	68272	63124	37131	31339	32232	41281	41147	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	21698	24518	21516	31172	39449	40969	40384	39952	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 2004	FY 2005	FY 2006	FY 2007
Diagnostics	486	483	1808	1509

FY 2004 Accomplishments:

- 486 Chemical Warfare Agent Defense, Medical Diagnostics - Initiated development of diagnostic applications for miniaturized mass spectrometer. Developed diagnostics that can be used to diagnose exposure via respiratory route. Refined analytical methods to measure scopolamine levels in blood and tissue. Investigated applicability of ocular device for self-examination of pupillary response.

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):
Total 486

FY 2005 Planned Program:

- 483 Diagnostic Technologies - Perform applied research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Initiate additional experiments focusing on detecting sulfur mustard exposure. Validate Walter Reed Army Institute of Research (WRAIR) cholinesterase assay. Continue development of alternate sample collection/extraction technology.

Total 483

FY 2006 Planned Program:

- 608 Diagnostic Technologies - Continue applied research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Pursue experiments focused on detecting sulfur mustard exposure. Develop an automation/high throughput strategy for WRAIR cholinesterase assay. Accelerate development of alternate sample collection/extraction technology for CW agent.
- 1200 Animal Models - Develop a diagnostic gene set to determine exposure to CW agent vesicant and the class of CW agent in a small animal model. Evaluate diagnostic gene set for exposure to non-human primate exposure to nerve agent. Accelerate automation/high throughput strategy for cholinesterase analysis bridging studies from animal models to potential human organophosphate exposure.

Total 1808

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

DATE: **February 2005**

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:

- 509 Diagnostic Technologies - Accelerate research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Finalize automation/high throughput experiments for cholinesterase assay. Validate alternate sample collection/extraction technology. Initiate lab based studies to assess the development of a genomics-based diagnostic screening test for chemical warfare agent exposure. Initiate feasibility studies for incorporation of WRAIR whole blood cholinesterase assay into a hand held platform. Conduct animal studies for detecting biomarkers of CW agent exposure in biological samples.
- 1000 Animal Models - Refine assay procedures for the diagnostic CW gene set markers and down-select predictive gene targets to refine a diagnostic test for low level nerve agent exposure. Complete data package and all validation studies for advanced development transition of an automation/high throughput strategy for serum cholinesterase levels.

Total 1509

	FY 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	5458	6463	3045	7119

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 2700 Chemical Warfare Agent Defense, Low Level CW Agent Exposure: Effects and Countermeasures (DTO CB51) - Assessed short-term behavioral, physiological, and neuropathological effects of VX nerve agent in rodents following low-dose exposures for varying durations and their potential impact on human operational readiness. Initiated studies on the effects of current prophylactic and therapeutic treatments on the maximum tolerated dose for repeated CW agent exposures and on other indices of chemical agent toxicity.
- 2758 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Determined the effects of NTAs on energy metabolism of cardiac cells and the effectiveness of decontamination on percutaneous NTAs. Conducted electrophysiological evaluation of cardiovascular, respiratory, muscular and cortical dysfunction.

Total 5458

FY 2005 Planned Program:

- 2605 Chemical Warfare Agent Defense, Low Level CW agents Exposure: Effects and Countermeasures (DTO CB51) - Complete 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. Complete initial species and route integration studies that provide a basis for more accurate extension of results to human military operator risk assessment.
- 3858 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Evaluate the effectiveness of anticonvulsants against seizures produced by NTAs, in vivo (inside the organism) persistence of NTAs, and current medical countermeasures against NTAs. Conduct evaluation of respiratory dynamics and lung biochemistry.

Total 6463

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

DATE: **February 2005**

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:

- 3045 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 3045

FY 2007 Planned Program:

- 7119 Non-Traditional Agent Medical Countermeasures - Expand studies of the medical effects of additional classes of NTAs including ion channel blockers and convulsive agents. Work performed will center on understanding the mechanisms of activity and discovering targets for intervention. Perform efficacy studies of identified target molecules for intervention against peptide NTAs and additional convulsant agents. Conduct studies to identify genomic and proteomic expression profiles in animal models and ex vivo animal or human tissue models against peptide and other neurotropic emerging chemical threat agents.

Total 7119

	FY 2004	FY 2005	FY 2006	FY 2007
Pretreatments	3857	3705	5075	9076

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

- 3361 Nerve Agent Defense, Biological Scavenger - Determined pharmacokinetics of CW agents and the impact of pretreatment in guinea pigs. Determined x-ray crystallographic structure of catalytic scavengers. Continued pretreatment intervention studies of vectors to deliver bioscavenger genes. Characterized animal models to test efficacy of nerve agent bioscavengers. Tested physiologic pharmacokinetic model of CW agents.
- 496 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Evaluated cyanide toxicity using an inhalation model. Investigated efficacy of sulfur donors and methemoglobin formers as cyanide pretreatment.

Total 3857

FY 2005 Planned Program:

- 482 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Screen anti-cyanide compounds for efficacy.
- 3223 Nerve Agent, Bioscavengers - Complete development of transgenic animal models that can produce sufficient amounts of recombinant enzyme scavengers for clinical trials. Complete feasibility testing of vector/gene combinations to validate the concept of gene therapy for bioscavengers. Continue pretreatment intervention studies of vectors to deliver bioscavenger genes.

Total 3705

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

DATE: **February 2005**

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:

- 5075 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). Purify sufficient hBuChE (Block I) for animal safety and efficacy proof-of-concept studies. Develop procedures and systems for large scale purification of recombinant bioscavengers (Block II). Produce hBuChE bioscavenger (Block I) under current Good Manufacturing Practice (cGMP) conditions in sufficient quantity for future phase I safety trials in human subjects. Develop transgenic animal model to evaluate therapeutic approaches for human plasma-derived butylcholinesterase. Expand the evaluation of human protein catalytic bioscavengers.

Total 5075

FY 2007 Planned Program:

- 9076 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 in genetic knock-out mice. Continue to develop knock-out murine models for evaluation of recombinant and catalytic bioscavenger evaluation. Extend efficacy studies to NHP models. Accelerate the determination of 3-D structure of human bioscavenger proteins.

Total 9076

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

DATE: **February 2005**

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

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	11897	6971	11588	13468

FY 2004 Accomplishments:

- 634 Nerve Agent Defense, Nerve Agent Anticonvulsants - Determined efficacy of midazolam and anticholinergic drug combinations against seizures and lethality caused by nerve agents. Determined minimal amount of atropine needed to sustain survival in non-human primates exposed to nerve agent.
- 729 Nerve Agent Defense, Neuroprotection - Tested Food and Drug Administration (FDA) approved drugs shown to be neuroprotective in both anatomic and behavioral studies.
- 1000 Nerve Agent Defense, Improved Oxime (DTO CB48) - Continued assay development, stability studies, and studies to identify and characterize a surrogate marker for efficacy of candidate oxime(s) for use against traditional nerve agents and NTAs.
- 1662 Vesicant Agent Defense, Vesicant Medical Countermeasures - Conducted screening of candidate antivesicant compounds. Developed in vitro (inside the test tube) and in vivo (inside the organism) models to support efficacy studies of new antivesicant countermeasures.
- 2127 Vesicant Agent Defense, Cutaneous Therapeutics - Identified candidate treatment strategies and collate findings in concert with medical experts and relevant research teams. Defined in vitro/in vivo models, establish pathophysiological endpoints, and define cellular and tissue consequences of exposure.

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

FY 2004 Accomplishments (Cont):

- 4777 Vesicant Agent Defense, Mustard Gas Antidote - Enhanced the effectiveness of Signal Transduction Inhibition Methodology Antioxidant Liposomes (STIMAL), also known as the Redox Regulating Liposome (RRL), by further product development. Elucidated the pathophysiology of mustard agents in previously developed in vitro and in vivo models. Explored additional modalities such as pharmacogenomically-based drugs and complement blockade. Completed initial efficacy studies of STIMAL against HD. Conducted detailed studies on the inhalation of mustards (bis-2-CEES) to determine if oxidative stress is a significant part of the pathophysiology.
- 731 Chemical Warfare Agent Defense, Inhalation Therapeutics - Screened clinically available drugs for potential efficacy against HD using the mouse model.
- 237 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Pursued development of screening procedures for the evaluation of decontaminants using analytical techniques and animal models. Determined the extent that HD forms a reservoir in skin using pig and hairless guinea pig skin models.

Total 11897

FY 2005 Planned Program:

- 964 Nerve Agent Defense, Improved Oxime (DTO CB48) - Complete assay development and stability studies. Complete the identification and characterization of a surrogate marker for efficacy of candidate oxime(s) for use against traditional nerve agents and NTAs.

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

FY 2005 Planned Program (Cont):

- 579 Nerve Agent Defense, Nerve Agent Anticonvulsants - Evaluate efficacy of combinations of midazolam with selected anticholinergic compounds against nerve agent seizures in rodent (guinea pig) and, if relevant, non-human primate models. Develop analytical method to detect therapeutic levels of scopolamine in blood and tissue. Continue to develop a method to directly assay atropine levels in blood.
- 434 Nerve Agent Defense, Neuroprotection - Test putative neuroprotectants in at least one and possibly more than one animal species. Investigate potential markers for neuroprotectant effects, e.g.., EEG power spectrum, Pulse oximetry, Neuroimaging. Develop and validate a neurobehavioral model for change in ability to carry out complex behavior after recovery from nerve agent toxicity.
- 1929 Vesicant Agent Defense, Vesicant Medical Countermeasures - Collate available industrial documentation. Strengthen technology transfer mechanisms. Develop in vivo/in vitro models. Procure compounds for screening modules. Initiate screening procedures. Prioritize screened compounds. Select compounds for further safety and efficacy evaluation.
- 1929 Vesicant Agent Defense, Cutaneous Therapeutics - Complete development of a superficial dermal vesicant injury model in weanling pigs. Begin development of a sulfur mustard cutaneous wound healing model using African green monkeys. Complete development of an in vitro wound healing model to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries.
- 482 Chemical Warfare Agent Defense, Inhalational Therapeutics - Identify and solicit 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.

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DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 654 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Evaluate the ability of Sandia foam combined with wetting solutions to extract agent from under the skin and extend the time delay for effective decontamination against nerve agents, blister agents, and non-traditional agents (NTAs). Compare efficacy of reactive skin decontamination lotion (RSDL) with other leading skin decontamination products on skin challenge with HD, VX, and non-traditional agents (NTAs). Demonstrate the proof-of-concept for developing a decontaminating skin product that can be applied before or after exposure. Evaluate the effectiveness of RSDL and other leading decontamination products on skin that active Topical Skin Protectant (aTSP) was applied prior to CW agents. Begin developing a skin decontamination formulation that can be use in and around the eyes and wounds.

Total 6971

FY 2006 Planned Program:

- 1188 Nerve Agent Defense, Improved Oxime - Expand screening of novel compounds for evaluation against next generation of chemical threats.
- 2000 Nerve Agent Defense, Nerve Agent Anticonvulsants - Maintain a tech-watch of new anticonvulsant compounds and evaluate their efficacy against nerve agent-induced seizures using in vivo screening models. Determine efficacy of midazolam, and/or anticholinergic drug combinations, against seizures and lethality produced by all current threat agents in rodent (guinea pig) model.

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DATE: **February 2005**

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):

- 2400 Nerve Agent Defense, Neuroprotection - Investigate long-term neuroprotective strategies against the neurotoxic effects of acetylcholinesterase inhibitors. Evaluate putative neuroprotectants that have demonstrated effectiveness in neuronal rescue. Assess compounds in other pharmaceutical classes (alpha-amino-3-hydroxy-5-methyl-4-isoxazolepriopionic acid antagonists and cannabinoid analogs). Initiate research on a second large animal model (e.g., rabbit, pig, nonhuman primate). Develop and validate a guinea pig neurobehavioral test battery and validate the large animal neurobehavioral test battery.
- 1600 Vesicant Agent Defense, Vesicant Medical Countermeasures - Determine in rodents the safety and efficacy of selected compounds. Complete efforts to develop biological tissue assays for selected compounds and further animal model development, if needed, for ocular and pulmonary exposures.
- 2000 Vesicant Agent Defense, Cutaneous Therapeutics - Complete development of a sulfur mustard cutaneous wound healing model using African green monkeys. Develop a hybrid sulfur mustard-thermal burn model using weanling pigs. Utilize an in vitro wound healing model to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models. Investigate and develop additional resuscitative technologies that integrate established and emerging anti-vesicant therapeutic modalities into suitable candidate therapies in humans.
- 500 Chemical Warfare Agent Defense, Inhalation Therapeutics - Initiate experimentation to establish exposure/effects models from in vitro to in vivo systems by addressing a commonality of response/effects, i.e., identify a common response effect regardless of inhaled toxicant.

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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):

- 700 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Select a replacement for the M291 Skin Decontamination Kit (SDK). Evaluate the ability of new commercial skin decontamination formulations to remain effective even after long time delays. Continue development of a decontaminating wound product that can be applied before or after exposure. Continue development of a decontaminating skin product that can be used in and around the eyes and wounds. Begin development of an improved product for patient decontamination. Investigate and develop additional resuscitative technologies that integrate established and emerging anti-vesicant therapeutic modalities into suitable candidate therapies in humans.
- 1200 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 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 11588

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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:

- 1925 Improved Oxime - Accelerate oxime candidate downselection by establishing in vivo models in higher mammalian non-rodent species to evaluate the efficacy of candidate medical countermeasures (rabbits and non-human primates). Determine broad-spectrum efficacy of selected oximes against multiple nerve agents (GB, GD, VX, and four Non-traditional agents).
- 2000 Nerve Agent Defense, Nerve Agent Anticonvulsants - Determine the minimum amount of atropine needed to sustain survival in non-human primates exposed to two LD-50s of nerve agent.
- 3000 Nerve Agent Defense, Neuroprotection - Identify neurobehavioral changes in rats and guinea pigs following soman-induced status epilepticus: Effects of pharmacological intervention. Expand evaluation of putative neuroprotectants that have demonstrated effectiveness in neuronal rescue (proteasome inhibitor MNL519, NAALADase inhibitor, riluzole, estradiol; initiate evaluations of other proteasome inhibitor, antioxidant nitrones, ifenprodil and/or tiagabine, NPY and/or neuroactive steroids, cyclosporine and AMPA antagonists). Finalize evaluation of best animal model system for earlier neuronal rescue studies (including neuropathologic evaluation of proposed mechanism of recovery for each compound) and prepare these compounds for advanced development evaluations.
- 1600 Vesicant Agent Defense, Vesicant Medical Countermeasures - Define pharmacological categories for points of intervention in vesicant injury process. Screen potential antivesicant compounds. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Refine and demonstrate additional resuscitative technologies that integrate established and emerging therapeutic modalities into suitable candidate therapies in humans.

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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 (Cont):

- 2000 Vesicant Agent Defense, Cutaneous Therapeutics - Utilize an in vitro wound healing model to screen pharmacological interventions for the effective treatment of cutaneous sulfur mustard injuries. Assess instrumentation to evaluate depth of cutaneous vesicant injury. Demonstrate clinical correlates for targeted endpoints that have been developed for in vivo models.
- 722 Chemical Warfare Agent Defense, Inhalation Therapeutics - Complete studies largely (in vivo when possible) based on data gathered to identify lead compounds as candidates for administration as a medical countermeasure(s) therapy(ies) against multiple agent exposures. Develop screening protocol to evaluate and down-select candidate compounds.
- 821 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continue development of a decontaminating skin product that can be applied before or after exposure. Continue development of a decontaminating skin product that can use in and around the eyes and wounds. Continue development of an improved product for patient decontamination. Begin development of improved product for the decontamination of remains. Continue investigation and development of additional resuscitative technologies that integrate established and emerging decontamination and detoxification therapeutic modalities into suitable candidate therapies in humans.
- 1400 Animal Models - Complete all pharmacodynamics and pharmacokinetics data, and toxicity data for selected oxime candidate. Develop transition data package for improved oxime candidate product to advanced developer.

Total 13468

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	6695	0	0

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

FY 2005 Planned Program:

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

Total 6695

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	201	0	0

FY 2005 Planned Program:

- 201 SBIR

Total 201

C. Other Program Funding Summary:	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	10097	13129	24363	19222	32238	31302	32460	34454	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	300	1600	3000	4500	4900	5500	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 the highest probable 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.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Radioprotectants	0	0	300	1600

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TR2**

FY 2006 Planned Program:

- 300 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).

Total 300

FY 2007 Planned Program:

- 1600 Radioprotectants - Evaluate three to four new compounds 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.

Total 1600

C. Other Program Funding Summary:

	FY 2004	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	0	2200	4500	4156	4500	6865	Cont	Cont

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 2004 Actual	FY 2005 Estimate	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	148276	181972	164481	149428	149530	152027	155919	149176	Continuing	Continuing
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	88011	92075	60787	76897	70670	73260	66155	54853	Continuing	Continuing
CM3	HOMELAND DEFENSE (ATD)	1738	3380	0	0	0	0	0	0	0	5118
CP3	COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	44353	68272	63124	37131	31339	32232	41281	41147	Continuing	Continuing
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	10097	13129	24363	19222	32238	31302	32460	34454	Continuing	Continuing
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	0	2200	4500	4156	4500	6865	Continuing	Continuing
TT3	TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	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. Mission Description and Budget Item Justification: This program element (PE) demonstrates technologies that enhance the ability of U.S. forces to defend against, and survive chemical and biological (CB) warfare. This program element (PE) funds advanced technology development for Joint Service and Service-specific requirements in both medical and physical sciences CB defense areas. The medical program aims to produce drugs, vaccines, and medical devices as countermeasures for CB threat agents. Specific areas of medical investigation include: prophylaxis, pretreatment, antidotes and therapeutics, personnel and patient decontamination, and medical management of casualties. In the physical sciences area, the focus is on demonstrations of CB defense technologies, including biological detection, chemical detection, and decontamination. These demonstrations, conducted in an operational environment with active user and developer participation, integrate diverse technologies to improve DoD Chemical/Biological Warfare (CBW) defense and deterrence. These demonstrations are leveraged by the Counterproliferation Support Program and include remote Biological Detection. Also research efforts are planned to evaluate technologies for Weapons of Mass Destruction Civil Support Teams (WMD-CSTs). Work conducted under this PE transitions to and provides risk reduction for System Integration/Demonstration (PE 0603884BP/PE 0604384BP) activities. The work in this PE is consistent with the Joint Service CB Defense Research, Development, and Acquisition (RDA) Plan. This PE also provides for the conduct of advanced technology development in the areas of real-time sensing, accelerated BW operational awareness, and the restoration of operations following a BW/CW attack. This program is dedicated to conducting proof-of-principle field demonstrations, and tests of system-specific technologies to meet specific military needs.

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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 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	156496	117343	84778	89432
Current Biennial Budget Estimates (FY 2006)	148276	181972	164481	149428
Total Adjustments	-8220	64629	79703	59996
a. Congressional General Reductions	-128	-3171	0	0
b. Congressional Increases	0	67800	0	0
c. Reprogrammings	-5010	0	0	0
d. SBIR/STTR Transfer	-2645	0	0	0
e. Other Adjustments	-437	0	79703	59996

Change Summary Explanation:

Funding: FY05 - Congressional increases to enhance projects within the science and technology base (+$52,650K CB3; +$1,000K CM3; +$14,150K TB3). Congressional general reductions and other adjustments (-$1,102K CB3; -$69K CM3; -$141K CP3; -$1,499K TB3; -$360K TC3).

FY06 - Enhance research efforts in physical sciences and chemical/biological medical countermeasures (+$17,000K CB3; +$31,000K TB3; +$3,000K TC3; +$4,000K TT3). Upgrade test and evaluation capability (+$16,161K CB3 +$2,839K TT3). Inflation adjustment (+$900K CB3; +$508K TB3; +$363K TC3; +$217K TT3). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (+$890K CB3; -$2,429K CM3; -$4,563K CP3; -$16,316 TB3; +$16,982K TC3; +$9,151K TT3).

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BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA3 - Advanced Technology Development (ATD)**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**

Funding (cont.)

FY07 - Enhance research efforts in physical sciences and chemical/biological medical countermeasures (+$21,940K CB3; +$4,000K TB3; +$3,000K TC3; +$2,060K TT3). Upgrade test and evaluation capability (+$26,347K CB3; +$2,653K TT3). Inflation adjustment (+$1,288K CB3; +$659K TB3; +$322K TC3; +$237K TT3). Reprioritization of programs within the Chemical Biological Defense Program to support higher priority efforts (-$3,516K CB3; -$2,425K CM3; -$4,114K CP3; -$10,792K TB3; +$9,309K TC3; +$9,028K TT3).

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 2004 Actual	FY 2005 Estimate	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)	88011	92075	60787	76897	70670	73260	66155	54853	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 2004	FY 2005	FY 2006	FY 2007
Technology Readiness Assessment	0	2297	0	0

FY 2005 Planned Program:

- 2297 Technology Readiness Assessment - Initiate Technology Readiness Evaluation (TRE) of Collective Protection Equipment. In FY06, item will become TT3 - Techbase Technology Transition.

Total 2297

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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 2004	FY 2005	FY 2006	FY 2007
Technology Transition	0	9290	4986	5140

FY 2005 Planned Program:

- 9290 Technology Transition BCA#1/21/29 - Conduct competitive assessment of all mature mass spectrometric biodetection approaches. Complete assessment of selected technologies in detection, decontamination, and protection from other government agency programs identified for evaluation in previous FY.

Total 9290

FY 2006 Planned Program:

- 4986 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 of detection, decontamination, modeling and simulation, and protection that support Joint Service Programs of Record.

Total 4986

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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 2007 Planned Program:

- 5140 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 5140

	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Tech Development	73164	0	0	0

FY 2004 Accomplishments:

- 4516 Reactive Air Purification - Explored reactive air purification technologies.
- 1107 Innovative Materials for MicroElectroMechanical Systems (MEMS) Fabrication - Explored technologies for innovative materials for MEMS fabrication.
- 2250 Technical Readiness Evaluation (TRE) - Conducted TREs of point and stand-off CB detection systems. Conducted stirred reactor, contact hazard, and off gas testing on emerging decontaminants not tested previously.
- 23043 Chem-Bio Defense Initiative - Developed multiple technologies and methodologies for the rapid detection of, and protection from biological agents utilizing both point and stand-off platforms.
- 1845 Rapid Response Database Center - Developed and validated rapid response 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 2004 Accomplishments (Cont):

- 6221 Sensor Net/CBRN Threat using Public and Private Assets - Developed and validated technologies for sensor net/CBRN threat using public and private assets.
- 922 Rapid Response Sensor Networking - Evaluated technologies for rapid response sensor networking.
- 5987 Bio-MEMS - Developed and validated bio-MEMS technologies.
- 1845 Vaporized Hydrogen Peroxide Tech for Decontamination - Developed and validated vaporized hydrogen peroxide technologies for decontamination.
- 1845 Handheld Biological Agent Detection System - Evaluated technologies for handheld biological agent detection system.
- 2767 Immunochemical Bio/Chem Agent Detector - Developed and validated immunochemical biological and chemical agent detector technologies.
- 6775 Countermeasures to Biological and Chemical Threats Response - Explored and evaluated technologies for countermeasures to biological and chemical threats response.
- 2351 Chemical and Biological Detectors - Developed technologies for chemical and biological detectors.
- 1845 High Intensity Pulsed Radiation Facility for CB Agent Defeat - Explored technologies for a high intensity pulsed radiation facility for CB agent defeat.

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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 2004 Accomplishments (Cont):

- 9845 Technology Transition - Completed development of integrated ultra violet matrix assisted laser desorption ionization - time of flight and infrared matrix assisted laser desorption ionization - time of flight mass spectrometers. Completed catalytic oxidation filtration device. Completed evaluation of microarray of gel-immobilized compounds on a chip (MAGIChip). Continued assessment of technologies in detection, decontamination, and filtration from other government agency programs.

Total 73164

	FY 2004	FY 2005	FY 2006	FY 2007
Decontamination	900	1931	2030	4864

FY 2004 Accomplishments:

- 900 Decontamination, Oxidative Formulation (DTO CB44) BCA# 18/23/34- Completed demonstration of products with existing applicator systems and determined suitability for peroxide systems. Modified and developed alternative applicators. Completed basic integration of products into a simulated chemical biological environment. Extended test bed to include multiple agents and non traditional agents. The DTO supported the Joint Service Tactical Decontamination Systems (JSTDS).

Total 900

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program:

- 1931 Decontamination, Oxidative Formulation (DTO CB44) BCA#18/23/34 - Complete safety, health and environmental studies. Complete live agent chamber testing and determine which candidates meet efficacy requirements. Demonstrate limited operational utility of down-selected decontaminants and associated applicators using simulant field trials in relevant environments, and determine which candidates meet efficacy and operational requirements. Complete DTO and transition to Joint Service Family of Decontamination Systems. This DTO supports the Joint Service Transportable Decontamination Systems (JSTDS), and Joint Portable Decontamination System (JPDS) requirements.

Total 1931

FY 2006 Planned Program:

- 861 Decontamination, Solutions BCA#18/23 - Conduct advanced testing on additional candidates for potential transition to the Joint Portable Decontamination System (JPDS) program.
- 487 Decontamination, Sensitive Equipment BCA#17 - Select candidate technologies for potential transition to the Joint Platform Interior Decontamination (JPID) program and initiate advanced laboratory scale testing.
- 682 Decontamination, Solid Phase: BCA#18/23/34 - Initiate laboratory scale advanced sorbent testing on nanoparticulate decontaminant products provided by industry.

Total 2030

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

DATE: **February 2005**

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

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

PROJECT: **CB3**

FY 2007 Planned Program:

- 1146 Decontamination, Solutions BCA#18/23 - Complete chamber testing on Joint Portable Decontamination candidates and recommend transition to developmental program.
- 2000 Decontamination, Interior Platform Decontamination BCA#17 - Select technologies to demonstrate decontamination of platform interiors. Perform material compatibility testing on candidate technologies. Demonstrate salability of candidate technologies.
- 1360 Decontamination, Solid Phase BCA#18/23/34 - Conduct enhanced testing to provide chamber scale studies to assess the impact of applicator processes and procedures.
- 358 Decontamination, Sensitive Equipment - Complete advanced laboratory scale testing.

Total 4864

	FY 2004	FY 2005	FY 2006	FY 2007
Detection	9611	22324	21386	20822

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2004 Accomplishments:

- 3800 Chemical/Biological Agent Water Monitor (DTO CB37) BCA#31- Initiated limited utility assessment to demonstrate technology. Developed assessment criteria and initiated a biological prototype design and build for the assessment. Completed Milestone A for biological portion of program. This DTO supported Joint Chemical Biological Agent Water Monitor (JCBAWM).
- 498 Stand-off, Sensor Assessment Non-Traditional Agents (NTAs) - Continued development of spectral database. Initiated enhancements of physics based performance models to include NTAs for the assessment of fielded and developmental systems to detect and identify NTAs.
- 4832 Lightweight Integrated CB Detection (DTO CB50) BCA#3/4 - Completed evaluation and continued development of the Department of Energy's micro chemistry laboratory to include biological threats. Initiated the evaluation of the pyrolysis-gas chromatography-ion mobility spectroscopy (GC-IMS) system and a trade off study to down-select the appropriate system concept to meet modular CB detection requirements.
- 481 Point Detection, Biological Identification - Initiated development of an automated system to populate a biomarkers database system based on mass spectrometric analysis.

Total 9611

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program:

- 990 Testing and Trials - Hot Lightweight Chemical Detector (LCD) BCA# 20/31/33- Initiate 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 will be 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).
- 3352 Detection Test Capabilities for Non-Traditional Agents BCA# 33 - Initiate development of agent to simulant correlations in support of detection T&E needs. Conduct analytical studies on the impact of threat environments on the properties of neat agents. Develop facility for detector testing of NTAs.
- 5690 Lightweight Integrated CB Detection (DTO CB50) BCA# 3/4/21/31 - Down-select technologies to the best two or three approaches for pyrolysis-GC-IMS. Prepare preliminary design concepts based on these approaches.
- 4820 Chemical/Biological Agent Water Monitor (DTO CB37) BCA# 31 - Complete prototype build for biological detection requirements and assessment methodology. Continue development of chemical detection portion of the program with an objective of a Milestone A in FY06.
- 1990 Point Detection, Biological Identification BCA# 21 - Initiate micro-array concept for high throughput laboratory bio detection/identification. Complete prototype build for an automated antibody multiplex assay system with reader to reduce consumable cost for Joint Biological Point Detection System (JBPDS).
- 1990 Laser Induced Surface Analysis (LISA) Prototype BCA# 28 - Assess the performance of the first generation detection algorithm under operational environments. Develop the second generation detection algorithm based on the assessed shortfalls of the first generation algorithm. Support transition of technology into Chemical Unmanned Ground Reconnaissance (CUGR) Advanced Concept Technology Development (ACTD).

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program (Cont):

- 2497 System Performance Modeling BCA# 7/10/21 - Conduct analytical feasibility studies on the technical parameters in the detection of CB contamination on surfaces in post decontamination applications. Initiate the development of databases containing spectral infrared backgrounds suitable for standoff applications (includes imaging techniques). Conduct analytical feasibility studies on the minimum acceptable technical parameters for a stand-alone low cost/low power biological trigger system for early warning.
- 995 Stand-off, Sensor Assessment Non-Traditional Agent (NTA) BCA# 33 - Complete spectral database of NTAs. Complete enhancements of physics based performance models to include NTAs for the assessment of fielded and developmental systems to detect and identify NTAs.

Total 22324

FY 2006 Planned Program:

- 4500 Point Detection, Biological Identification BCA# 21 - 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) BCA# 3/4/21/31 - Assess ability of technology to meet Joint Modular Chemical Biological Detection System (JMCBDS) requirements and as technology insertion for Joint Biological Point Detection System and Reconnaissance Systems as enhancements/replacement for the biological trigger systems. The technology will also meet the need to detect/identify chemical aerosols. Initiate fabrication of brassboards.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2006 Planned Program (Cont):

- 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 Agent Water Monitor (JCBAWM).
- 1426 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.
- 4000 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 21386

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2007 Planned Program:

- 5600 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.
- 7222 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.
- 4000 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.
- 2000 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.
- 2000 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 20822

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

DATE: February 2005

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

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

PROJECT: CB3

	FY 2004	FY 2005	FY 2006	FY 2007
Modeling and Simulation Battlespace Management	4000	1353	7252	10324

FY 2004 Accomplishments:

- 400 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA# 5/6- Transitioned advanced predictive capabilities multi-community environmental storm observatory (MESO) to Joint Effects Model (JEM) Block I program. Enhanced the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.
- 968 Chemical Biological Defense Program Decision Capability (formerly Simulation Based Acquisition) - Initiated investigation of prototype software development requirements to meet performance specifications for an analysis and virtual prototyping capability that would support acquisition of CB defense end items to protect a variety of installations/facility types. Developed an investment plan for the near term to build the rapid analysis capability.
- 1711 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA# 8/9- Tested and finalized Aerial Port of Debarkation (APOD) and Sea Port of Debarkation (SPOD) representation. Defined Contamination Avoidance of Seaports of Debarkation (CASPOD) data requirements. Populated SPOD representation. Prepared for transition of the fighter-base and casualty modules to Joint Operational Effects Federation (JOEF) program to support Block I Demonstration. Completed the first phase of independent verification of software. Began module definition and design for marine Expeditionary Force HQ, depot, and railroad modules.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2004 Accomplishments (Cont):

- 921 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA# 8/9- Completed the transition of Simulation Training and Analysis For Fixed Site (STAFFS) model to the Joint Operational Effects Federation (JOEF). Supported integration of NBC Casualty and Resource Estimation Support Tool (CREST) and impact models into JOEF.

Total 4000

FY 2005 Planned Program:

- 771 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA#5/6 - Transition advanced predictive capabilities (MESO) to Joint Effects Model (JEM) Block II program. Enhance the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.
- 482 Chemical and Biological Warfare Effects on Operations (DTO CB43) BCA#5/6/8/9 - Test and transition to Joint Operational Effects Federation (JOEF) Block II. Perform internal Verification and Validation.
- 100 Battlespace Management BCA#8/9 - Develop a shared Common Operating Picture (COP) in support of Joint Warning and Reporting Network (JWARN).

Total 1353

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2006 Planned Program:

- 1500 Battlespace Management - Transition end-items to Joint Effects Model (JEM) and other elements of Joint Program Manager for Information Systems (JPM-IS). Initiated development of a sensor integration facility.
- 2600 Chemical and Biological Hazard Environment Prediction (DTO CB55) BCA#5/6 - Transition advanced predictive capabilities (MESO) to Joint Effects Model (JEM) Block II program. Enhance the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging. Transition nomograph generation capability to JEM.
- 1500 CBDP Decision Support Capability - Perform analytic excursions in support of CBDP with decision capability.
- 1652 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA# 5/6/8- Transition mobile force capability and chemical hazard estimation method and risk assessment tools (CHEMRATS) Block II to JOEF. Integration of CBRN effects into JICM theater campaign model.

Total 7252

FY 2007 Planned Program:

- 2500 Battlespace Management BCA#2/3/8/9 - Transition fully Netcentric Enterprise Systems (NCES) compliant modules of all relevant Joint Program Manager for Information Systems (JPM-IS) capabilities and applications to Joint Warning And Reporting Network (JWARN). Complete sensor integration facility.
- 2500 Chemical Biological Defense Program (CBDP) Decision Support Capability BCA#1-39 - Deliver first versions of JRO, JPEO, and JSTO decision support applications. Transition modules to other Physical Science and Technology Capability Areas.

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

DATE: February 2005

BUDGET ACTIVITY: 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):

- 2600 Chemical and Biological Hazard Environment Prediction (DTO CB62) BCA#5/6/8 -Transition initial modules for high altitude intercepts to JEM. Transition initial sensor data fusion algorithms to JEM. Hazard Prediction with Nowcasting - Transition data assimilation techniques to improve forecasts of near-surface characteristics important for hazard prediction.
- 2724 Chemical and Biological Warfare Effects on Operations (non-DTO) BCA#5/6/8 - Transition and testing of JOEF by end-users, including a mobile forces module and an initial prototype theater-level module.

Total 10324

	FY 2004	FY 2005	FY 2006	FY 2007
Protection	336	1907	8729	8950

FY 2004 Accomplishments:

- 336 Individual Protection, Clothing for Non Traditional Agent (NTA) - Identified simulants for NTA aerosols when testing protective clothing layers and systems. Determined the effects of water phase in protective clothing layers on protection against NTA simulants. Characterized a number of materials and material systems for NTA protection.

Total 336

FY 2005 Planned Program:

- 1907 Collective Protection, Air Purification - Assess the impact of pollutants on aerosol/particulate filters. Demonstrate an advanced electrically-enhanced filter that will produce the same results found in breadboard prototypes.

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DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program (Cont):

Total 1907

FY 2006 Planned Program:

- 2629 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) BCA#11- Fabricate prototype microclimate cooling systems. Integrate advanced aerosol protection technologies and advanced closures into the Joint Service Lightweight Integrated Suit Technology (JSLIST) garment for demonstration. This DTO supports the Joint Expeditionary Collective Protection (JECP) program .
- 600 Individual Protection, Masks - Initiate efforts to integrate technologies identified in the FY05 applied research studies into future mask systems.
- 3500 Advanced Air Purification System Model (DTO CB61) BCA#11- Initiate assessment of advanced commercial off-the-shelf (COTS) and developmental air purification systems. Demonstrate candidate residual life indicators in operational filtration systems. This DTO supports the Joint Expeditionary Collective Protection (JECP) program.
- 2000 Collective Protection, Shelters - Fabricate shelters using novel materials, enhanced closures, and novel ingress/egress systems and initiate assessment. Continue the development of expedient protective coatings for demonstration.

Total 8729

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2007 Planned Program:

- 3600 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) BCA #11- Demonstrate micro-climate cooling systems. Demonstrate an integrated garment with advanced aerosol protection and advanced closures. This DTO support Joint Expeditionary Collective Protection (JECP) program. This DTO also supports the current Joint Service Lightweight Integrated Suit Technology program.
- 500 Individual Protection, Masks - Continue integration and demonstration of advanced mask technologies for future mask systems.
- 3800 Advanced Air Purification System Model (DTO CB61) BCA# 11 - Continue the assessment of regenerative filtration systems. Demonstrate advanced adsorbents for transition into existing filters. DTO supports the Joint Expeditionary Collective Protection (JECP) program.
- 1050 Collective Protection, Shelters - Continue assessment of shelters using novel materials, enhanced closures, and novel ingress/egress systems. Demonstrate optimized expedient protective coatings.

Total 8950

	FY 2004	FY 2005	FY 2006	FY 2007
Test and Evaluation	0	0	16404	26797

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DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2006 Planned Program:

- 200 Individual Protective Equipment (IPE) - Battlefield Test Conditions - Evaluation Methodology - Prepare statements of work, stand up working groups.
- 200 Joint Expeditionary Collective Protection (JECP) - Modeling and Simulation - Establish requirements, consolidate databases and required information for legacy models.
- 1600 JECP - Advanced Technologies Tests - Evaluate performance for legacy and current systems, optimize current procedures, initiate plans for instrumentation to measure residual-life indicators (RLI), develop filtration schemes and test protocols.
- 6604 JECP - Advanced Technologies Tests - Design and initiate construction of test fixtures for RLI test fixture, filtration-systems test capability, and material, seams and enclosures test fixture.
- 100 JECP - Simulant Platform Tests - Plan and integrate team.
- 100 Decontamination System Battlefield Test Conditions - Evaluation and Methodology - Develop methods, plans and requirements to translate battlefield conditions and communicate decontamination procedures to commanders, i.e., quantify agent and interferent effects, relate to surface effects and urgency of decontamination procedures.
- 1500 Decontamination System Degradation Tests - Review of American Society for the Testing of Materials (ASTM) methods, instruments and equipment, integrate and conduct validation testing for quantification of performance degradation.
- 2000 Individual Protection Equipment (IPE) Bio Mask System Chamber test - Commence modifications for prototype chamber for use with biological materials, toxic industrial materials (TIMs), and non-traditional agents (NTAs).
- 200 IPE Overarching Model - Establish model requirements, data needs, development processes, consolidate databases and initiate code production and model development.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2006 Planned Program (Cont):

- 200 IPE Expanded Simulant system Test - Initiate project planning, determine data requirements, collate CB expertise.
- 3700 IPE Next Generation Materials Test - Complete design of the Chemical and Biological Agent Resistance Test (CBART) test fixture. Fabricate fixture and validate performance.

Total 16404

FY 2007 Planned Program:

- 1700 Joint Expeditionary Collective Protection (JECP) - Modeling and Simulation - Construct prototype model, leverage legacy models, commence validation, verify model via test data, prepare validation reports, 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.
- 5947 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.
- 4000 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).

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2007 Planned Program (Cont):

- 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.
- 2000 IPE Expanded Simulant System Test - Develop real-time Man In Suit Test (MIST) sampler, develop aerosol-challenge test capabilities for MIST chamber.

Total 26797

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	52221	0	0

FY 2005 Planned Program:

- 1984 Bioterrorism Preparedness - Develop a training program to support hospitals in the event of a bioterrorism event.
- 2579 Detecting Contaminants in Drinking Water - Analyze, test and develop prototype CBRN and TIC/TIM sample concentration and detection 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 Toxic Industrial Chemicals (TICs).
- 992 Dual Use Detection Technology for Sick Building Syndrome - Develop sensors for internal monitoring of buildings for the detection of hazardous materials in the event of terrorism and sick building syndrome.

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RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program (Cont):

- 3372 Handheld Biosensor and Continuous Monitor for Biodetection - Develop optically based sensors for the use as handheld systems for the detection of biological materials.
- 992 National Testbed for Rescue Robotics - Develop test facilities for evaluating and assessing the performance of small robotics devices in surveillance and hazardous environments.
- 2579 Water Quality Sensors - Develop 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 - Evaluate the suitability and use of proven gaseous and liquid decontamination technologies for use in human decontamination.
- 1984 Advanced Engineered Enzyme Decontamination System - Develop enzyme decontamination systems for a broad range of chemical biological warfare agents. Screen and evaluate existing enzymes and bio-engineering enzyme to provide improved decontaminants.
- 8430 Countermeasures to Chemical and Biological Defense/Rapid Response - Develop new models and sensor systems for both medical and environmental application against chemical and biological hazardous materials.
- 2975 E-Smart Threat Agent Network - Demonstrate 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) - Develop an optically based sensors for the use as handheld systems for the detection of biological materials.

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CB3**

FY 2005 Planned Program (Cont):

- 992 Hi-Int Pulsed Radiation for Chemical and Biological Agent Defeat - Install 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 - Develop 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) - Develop new production methods for solid state components used in the sensor systems.
- 4166 Laser Interrogation of Surface Agents (LISA) Inspector - Develop 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 - Develop sensor elements based on polymer films to act as molecular recognition moieties and serve as a potential replacement for antibodies.
- 992 Protection Against Toxic Industrial Chemical - Continue development and validation of TIC list. Evaluate the protection provided by current protective materials against identified TIC threats.
- 1736 Rapid Response Bio-Chem Decontamination, Liquid and Dry (Decon Green) - Optimize proven liquid and dry process decontamination technologies, packaging and deliverly systems for rapid deployment in biological and chemical incidents.
- 992 Rapid Response Database Systems Center - Develop 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.

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

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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 Planned Program (Cont):

- 992 Rapid Response Sensor Networking for Multiple Applications - Refine 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) - Complete the advanced media selection and the design of pre-industrialized test articles (full canisters) to be tested for performance and consistency. Initiate a controlled production run of two hundred (200) units in order to perform FY06 field evaluation and obtain feedback from military personnel. Continue 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. Develop an advanced Triosynated membrane and improved pre-filter/filter design.
- 2777 Removal of NBC Agents in Drinking Water - 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.

Total 52221

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	752	0	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 Planned Program:

- 752 SBIR

Total 752

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA4 CONTAMINATION AVOIDANCE (ACD&P)	20619	38299	22330	1017	8135	12214	5602	0	0	108216
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14368	16661	24678	25897	26496	14895	14289	27217	Cont	Cont
DE4 DECONTAMINATION SYSTEMS (ACD&P)	22270	17463	1015	2034	4576	2545	2269	4082	Cont	Cont

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

DATE: **February 2005**

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

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

PROJECT: **CM3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	1738	3380	0	0	0	0	0	0	0	5118

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

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 2004	FY 2005	FY 2006	FY 2007
WMD-Civil Support Teams	1738	2360	0	0

FY 2004 Accomplishments:

- 1365 WMD CST - Continued to evaluate Chemical / Biological detection / identification technologies for insertion into WMD CST Tables of Distribution and Allowances (TDA).
- 373 WMD CST - Developed modifications to commercial systems and technologies in response to specific WMD CST operational requirements.

Total 1738

FY 2005 Planned Program:

- 1360 WMD CST - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.

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PROJECT: **CM3**

FY 2005 Planned Program (Cont):

- 755 WMD CST - Develop modifications to commercial systems and technologies in response to specific WMD CST operational requirements.
- 245 WMD CST - Implement modified requirements and transition processes and continue to participate in analysis of alternatives and for follow-on technology insertion options.

Total 2360

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	992	0	0

FY 2005 Planned Program:

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

Total 992

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	28	0	0

FY 2005 Planned Program:

- 28 SBIR

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

PROJECT: **CM3**

FY 2005 Planned Program (Cont):
Total 28

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA4 CONTAMINATION AVOIDANCE (ACD&P)	20619	38299	22330	1017	8135	12214	5602	0	0	108216
CM5 HOMELAND DEFENSE (SDD)	945	17761	395	0	0	0	0	0	0	19101
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1525	1352	1557	1558	0	0	0	0	0	5992
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	8792	18200	0	0	0	0	0	0	0	26992

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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: **CP3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	4077	5116	0	0	0	0	0	0	0	9193

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. This program defends our forces against WMD by demonstrating and transitioning mature technology. 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 2004	FY 2005	FY 2006	FY 2007
ACTD Planning and Development	4077	5074	0	0

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**CP3**

FY 2004 Accomplishments:

- 3502 ACTD-PD - Performed technology demonstrations and maturity evaluation on the Joint Contaminated Surface Detector (JCSD) in preparation for the CBRN Unmanned Ground Reconnaissance (CUGR) ACTD in FY05. CASPOD ACTD transitioned to CP4 in FY04 for final demonstration and preparation for initial year of residual support in FY05.
- 575 ACTD-PD - Developed Concept-of-Operations (CONOPS) and procedures for Biological Defense fusion cell for the Biological Warfare Countermeasures Initiative (BWCI) Counter Biological project in preparation for United States Pacific Command (PACOM) FY05 demonstration.

Total 4077

FY 2005 Planned Program:

- 3574 ACTD-PD - Initiate technology maturity evaluations for selection of technologies for future ACTD candidates.
- 1500 ACTD-PD - Initiate 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 5074

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	42	0	0

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

PROJECT: **CP3**

FY 2005 Planned Program:

- 42 SBIR

Total 42

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14368	16661	24678	25897	26496	14895	14289	27217	Cont	Cont
TT3 TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	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: **TB3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	44353	68272	63124	37131	31339	32232	41281	41147	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 #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes), 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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PE NUMBER AND TITLE: **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**

PROJECT: **TB3**

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
DARPA Transition	16700	9652	0	0

FY 2004 Accomplishments:

- 16700 Defense Advanced Research Projects Agency (DARPA) Program Transition - Continued expansion and definition of medical biological defense technologies transitioned from DARPA. Completed chemical manufacturing and control studies and filed an IND application for a small-molecule antibiotic effective against anthrax. Developed additional B-cell lines and evaluated the B-cell based diagnostic sensor technology on clinical samples. Developed a blood assay for the superantigen toxin antagonists. Optimized plant lines and obtained milligram-quantities of plague vaccine antigens from multiple plant species for DNA shuffling in non-human primates for protection against three encephalitic alphaviruses.

Total 16700

FY 2005 Planned Program:

- 9652 Defense Advanced Research Projects Agency (DARPA) Program Transition - Conclude characterization and process development of candidate vaccines, therapeutics, and diagnostic technologies to determine if any are sufficiently mature to transition to development. 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 9652

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

PROJECT: TB3

	FY 2004	FY 2005	FY 2006	FY 2007
Diagnostics	4463	13611	4974	6204

FY 2004 Accomplishments:

- 1163 Diagnostic Technologies - Continued to compare alternative diagnostic technologies in laboratory-based and field-based studies prior to transition to the field medical laboratory. Continued to compare overlapping diagnostic technologies that can be integrated into a single comprehensive platform capable of detecting and identifying a broad range of biological threat agents in clinical specimens in laboratory-based and field-based studies. Continued to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS acquisition program.
- 1200 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Developed a technical data package format for delivering assays and reagents, in concert with the advanced developer.
- 2100 Diagnostic Technologies, Improved Immunodiagnostics Platform (DTO CB47) - Completed interlaboratory evaluation of top performing immunodiagnostic technology option. Performed a multi-center evaluation trial of the top performing immunodiagnostic platform and prepared a technical data package detailing results of the multi-center trial. Recommended immunodiagnostic technologies for incorporation into JBAIDS acquisition program.

Total 4463

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2005 Planned Program:

- 7361 Diagnostic Technologies - Identify an immunodiagnostic platform for transition to advanced developer. Initiate groundwork for a detailed analysis of alternatives for an advanced integrated diagnostic system capable of detecting and identifying a broad range of biological threat agents in clinical specimens in laboratory-based and field-based studies using a combination of appropriate technologies. 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. Collate data on host immune response for the development of specialized gene sets. Pursue investigation of recombinant DNA technologies. Apply new technological approaches for processing clinical samples to complex matrices and different threat types. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the Joint Biological Agent Identification and Diagnostic System (JBAIDS) acquisition program. Analyze clinical samples obtained from human vaccines receiving biodefense vaccines to evaluate host responses to the immunizations.
- 1445 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Deliver four nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer. Deliver four antigen detection assays and/or supporting reagents to the advanced developer.
- 4805 Diagnostics Technologies, IT Medical Surveillance - Demonstrate how to integrate medical surveillance information and potential CB threat agent information obtained through medical surveillance, with physical sciences detection information; and work toward defining a draft Concept of Operations (CONOPs) for the application of these technologies.

Total 13611

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RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2006 Planned Program:

- 3274 Diagnostic Technologies - Continue to provide multiplexed nucleic and immunoassays capable of distinguishing endemic pathogens from threat agents in clinical samples. Transition to advanced developer as testing is completed. Initiate a detailed analysis of alternatives for an advanced integrated diagnostic system capable of detecting and identifying a broad range of biological threat agents in clinical specimens. 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. 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. Develop gene sets correlating host immune response with exposure to endemic pathogens/threat agents. Identify appropriate recombinant DNA technologies. Apply new technological approaches for processing clinical samples to complex matrices and different organisms. Continue to apply proteomics finding to the development of immunologic assays for pathogen detection. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS incremental acquisition. Continue advanced development on next generation technologies. Expand technology assessments of systems compatible with future comprehensive integrated hand held diagnostic system. Invest in bioinformatics necessary to tie the integrated system together. Test toxin assays in a field or multicenter setting, as applicable.
- 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 4974

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2007 Planned Program:

- 4404 Diagnostic Technologies - Continue to provide multiplexed nucleic acid and immunoassays capable of distinguishing endemic pathogens from threat agents in clinical samples. Transition to advanced developer as testing is completed. Complete a detailed analysis of alternatives for an advanced integrated diagnostic system capable of detecting and identifying a broad range of biological threat agents in clinical specimens. 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. Continue to 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. Expand gene sets correlating host immune response with exposure to endemic pathogens/threat agents and testing on molecular platforms. Complete investigation of recombinant DNA technologies. Identify approaches for processing clinical samples to complex matrices and different organisms for transition to advanced developer. Continue to apply proteomics finding to the development of immunologic assays for pathogen detection. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS acquisition. Continue advanced development on next generation technologies. Provide validated assays for agents under current consideration for milestone decisions. Address more in depth validation studies complementing DTO CB58 to gain acceptance of the assays among other government labs and assist the advanced developer in gaining FDA approval of assays. Provide improved target preparation and extraction methodologies. Provide support to accelerate JBAIDS Block II acquisition planning. Perform advanced research on technologies compatible with a comprehensive integrated hand held diagnostic system; direct efforts at adapting to military use.

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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 6204

	FY 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	0	0	1726	7466

FY 2006 Planned Program:

- 1726 Genetically Engineered Threats - Expand resequencing effort significantly. Use previously developed microarray to determine genetic differences among various strains of B. anthracis. Develop novel interferon therapeutics and begin testing for effectiveness against broad spectrum viral agents.

Total 1726

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PROJECT: **TB3**

FY 2007 Planned Program:

- 7466 Genetically Engineered Threats - Begin development on additional resequencing microarrays for additional agents. Expand bioinformatics efforts to generate data on strain differences in B. anthracis and other agents. Pursue the following studies: toxin virulence factors, broad spectrum anti-viral compounds and common pathways of virulence. Elucidate molecular targets and seek antagonists for each target.

Total 7466

	FY 2004	FY 2005	FY 2006	FY 2007
Medical Biological Warfare Defense	3874	0	0	0

FY 2004 Accomplishments:

- 3874 Medical Biological Warfare Defense, Bioadhesion Research to Combat Biological Warfare - Continued to generate recombinant anthrax antigens, native protective antigen, lethal factor, and capsular antigens and continued to develop conjugated vaccine formulations. Continued to construct covalent conjugates and nanoparticles displaying various combinations of anthrax antigens and determined immunogenicity in animals. Continued to conjugate various combinations of anthrax toxins and capsular materials and determined the optimal conjugate for generating protective immune responses.

Total 3874

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PROJECT: TB3

	FY 2004	FY 2005	FY 2006	FY 2007
Pretreatments	9865	12526	15242	9174

FY 2004 Accomplishments:

- 2113 Vaccines, Bacterial - Continued to perform animal studies which support transition of potential Brucella vaccine candidates to advanced development. Performed studies to address the mechanism of protective cellular immunity induced by selected vaccine candidates. Continued studies supporting rPA and recombinant plague F1-V vaccine candidate clinical trials and progress toward licensure. Completed developmental work on the mouse potency assay in support of rPA vaccine candidate advanced development.
- 252 Vaccines, Toxin - Produced and characterized inactivated BoNT light chain vaccine candidates and large-scale truncations of BoNT holotoxins. Cloned and expressed existing BoNT vaccine candidates using selected plant-based expression systems. Initiated studies exploring multivalent vaccine technologies for protection against multiple botulinum neurotoxin serotypes.
- 1800 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Proposed formulation/device/route for delivery of combinations of multiple recombinant proteins. Performed definitive efficacy studies on monovalent vaccine in second animal model. Evaluated in vitro (inside the test tube) correlate of immunity.
- 2100 Vaccines, Toxin, Recombinant Ricin Vaccine (DTO CB46) - Completed toxicity assays, activity assays, and rodent efficacy studies for lead recombinant ricin toxin A-chain (rRTA) vaccine candidates. Conducted laboratory stability studies of the lead rRTA candidate. Evaluated lead candidate with in vitro models for vascular leak syndrome. Conducted efficacy studies in non-human primates with the lead rRTA vaccine candidate.

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

PROJECT: **TB3**

FY 2004 Accomplishments (Cont):

- 2900 Vaccines, Viral, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Initiated the evaluation of candidate vaccine platforms/constructs against a minimum of one of the alphaviruses of concern (WEE or EEE) in the mouse efficacy model. Continued research of the development of live attenuated mutant viruses as vaccine candidates for EEE virus infection. Established aerosol WEE animal efficacy models for evaluating vaccine candidates.
- 700 Vaccines, Viral, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Developed and improved animal models for evaluating vaccine candidates for protection against Ebola and Marburg viruses.

Total 9865

FY 2005 Planned Program:

- 1890 Vaccine Research Support, Alternate Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Demonstrate proof of concept for lead alternate vaccine delivery system(s). Complete preclinical research studies and prepare 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) - Complete a comprehensive review of results with lead candidate, including potency, efficacy, adjuvant studies, toxicity and pathology studies in rodents. Complete 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) - Continue testing candidates in available animals for EEE vaccine. Determine the compatibility of vaccine candidate, V3526, and vaccine platforms in animals.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2005 Planned Program (Cont):

- 1295 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Test leading vaccine candidates in animals (viral challenge dose, route, pre-existing vector immunity, and variation in viral challenge strain).
- 4591 Vaccine Research Support - Continue to perform animal studies which support clinical trials of selected vaccine candidates against bacterial threat agents. Initiate technology base studies in support of the development and eventual FDA licensure of the ricin and recombinant plague F1-V vaccine candidates. Initiate evaluation of inactivated BoNT light chain vaccine candidates as well as large-scale truncations of BoNT holotoxins in animal models. Initiate studies on multivalent vaccine candidates to protect against multiple BoNT serotypes, including cloning and expression of genes for novel multivalent vaccine candidates. Test promising vaccine strategies in higher animal species for ability to protect against filoviruses. Continue 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). Evaluate stability and immunogenicity of SEB toxin vaccine in support of clinical trial. Evaluate promising EEE/WEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Evaluate poxvirus DNA vaccine.

Total 12526

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RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2006 Planned Program:

- 900 Vaccine Research Support, Recombinant Ricin Vaccine (DTO CB46) - 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).
- 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 or alternate VEE constructs (the DNA- or replicon-based vaccine platforms) in animal models.
- 1900 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Conduct animal models of aerosol infection with filoviruses. Continue recombinant subunit vaccine development for Ebola virus. Prepare good manufacturing product (GMP) grade candidate vaccine materials for pre-IND studies.
- 1000 Resuscitative Intervention - Determine optimum dose mixture and route of entry for trivalent vaccine and evaluate any potential antigen interference phenomena. Prepare IND data package for filovirus vaccine candidate.
- 4000 Multiagent (Broad Spectrum) Medical Countermeasures - Accelerate promising multiagent vaccine candidate platforms such as virus-like particles, bacterial ghosts, spore-based vaccines and attenuated viral carriers.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2006 Planned Program (Cont):

- 4442 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 and recombinant plague F1-V vaccine candidates. Expand challenge studies against selected intracellular pathogen candidate vaccines and cell-mediated immunity. Evaluate studies on multivalent BoNT vaccine candidates to protect against multiple BoNT serotypes. Proceed with evaluation of promising vaccine strategies in higher animal species for ability to protect against filoviruses. Evaluate next generation 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 EEE/WEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Complete evaluation of poxvirus DNA vaccine. Evaluate the use of the marmoset animal model for possible future challenge studies requiring non-human primates. Complete data packages for Staphylococcus enterotoxin vaccine candidates. Prepare GMP lots of selected vaccine candidates for animal safety and challenge studies. 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 15242

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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:

- 3100 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Initiate duration of immunity studies with lead candidates. Compare individual constructs and combined formulations.
- 1000 Resuscitative Intervention - Develop final data package for trivalent recombinant protein vaccine combining anthrax, plague and the toxin product of choice from earlier optimization studies.
- 5074 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 FDA licensure of the ricin and recombinant plague F1-V vaccine candidates. Begin optimization of new generation intracellular pathogen vaccines, considering alternative adjuvants, routes of administration, and dosage schedules. Continue expanded challenge studies against selected intracellular pathogen candidate vaccines and cell-mediated immunity. Continue studies on multivalent BoNT vaccine candidates to protect against multiple BoNT serotypes. Proceed with evaluation of promising vaccine strategies in higher animal species for ability to protect against filoviruses. Evaluate ability and characteristics of next generation SEA/SEB immunogens as vaccine candidates to protect against multiple SE serotypes in vivo. Complete stability analysis and immunogenicity of SEB toxin vaccine in support of clinical trial. 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 9174

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

DATE: February 2005

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

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

PROJECT: TB3

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	9451	17888	41182	14287

FY 2004 Accomplishments:

- 2908 Therapeutics, Toxin - Standardized in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for Staphylococcal Enterotoxin (SE) intoxication. Tested FDA-approved drugs for septic shock as adjunct SE therapeutics in vivo.
- 1420 Therapeutics, Bacterial - Continued the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in small animal models.
- 400 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Completed the assessment of the clinical study site to determine feasibility for use in a field trial of cidofovir to treat human monkeypox. Completed an initial dose seeking study using an oral form of cidofovir in the monkeypox primate model.
- 2600 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - 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 neurotoxin (BoNT) intoxication.
- 800 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determined the basis for the pathogenesis of filovirus-induced shock or toxemia in animal models and identifed potential mediators.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2004 Accomplishments (Cont):

- 1323 Therapeutics, Viral - Completed the evaluation of one antiviral drug formulation for orthopox viruses. Continued evaluating second drug formulation or prodrugs for orthopox viruses.

Total 9451

FY 2005 Planned Program:

- 2917 Therapeutics, Bacterial - 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.
- 5861 Therapeutics, Toxin - Continue proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of Staphylococcal Enterotoxin (SEs). Enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.
- 2200 Therapeutics, Viral - Finish characterization of genes identified in random homozygous knock-out screening and their evaluation as drug targets. Finish screening for inhibitors of ribonucleic acid (RNA) polymerase. Evaluate novel targets obtained from proteomic studies.
- 540 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Complete 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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2005 Planned Program (Cont):

- 4430 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Continue to evaluate high affinity recombinant human antibodies against Botulinum Neurotoxins (BoNT) in vivo. Develop surrogate endpoints of human clinical efficacy for BoNT therapeutics. Evaluate 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) - Determine 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 17888

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. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research.
- 2750 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, SEs). Enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.

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

DATE: **February 2005**

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):

- 2455 Therapeutics, Viral - Continue evaluating new drug formulations or prodrugs for orthopox viruses. 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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**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.
- 1000 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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TB3**

FY 2006 Planned Program (Cont):

- 24000 Multiagent (Broad Spectrum) Medical Countermeasures - Expand drug discovery efforts in anti-sense RNA technology that target common bacterial virulence or house-keeping genes (pathogenicity islands, quorum-sensing molecules, siderophores, etc.). Evaluate therapeutic compounds and small molecule archives for potential drug interactions against common pathogenesis pathways identified from basic research efforts. Create a rapid bug-to-drug transition teaming panel to bridge promising efforts from intramural laboratories to commercial and venture-capital interests capable of accelerating technical, regulatory and managerial hurdles to drug licensure. Develop transgenic animal models and alternate animal model systems to better replicate the human-pathodeme common virulence and response pathways. Design of platform 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 41182

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. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging bacterial therapeutic modalities into suitable candidate therapies in humans.

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

DATE: **February 2005**

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):

- 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, SEs). Define and demonstrate in vivo suitable delivery systems for lead candidate compounds. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans.
- 3700 Therapeutics, Viral - Continue to complete 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. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging orthopox therapeutic modalities into suitable candidate therapies in humans.
- 1000 Resuscitative Intervention - Complete all evaluations of oral pro-drug vs. IV Cidofovir for efficacy against variola at the CDC and prepare final data package for IND submission requirements. Expand initial development of the in silico modeling of patient physiological response to chemical (nerve) agent into an operational capability model for physician use.

Total 14287

	FY 2004	FY 2005	FY 2006	FY 2007
Congressional Increases	0	14033	0	0

FY 2005 Planned Program:

- 2777 Anthrax and Oral Plague Vaccine Development -

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2005 Planned Program (Cont):

- 3818 Bioadhesion Research to Combat Biological Warfare - Evaluate efficacy of vaccine candidates that contain covalently bound conjugated anthrax virulence determinants.
- 992 Oral Adjuvants -
- 3471 Plant Vaccine Development -
- 2975 Polyclonal human antibody production system -

Total 14033

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	562	0	0

FY 2005 Planned Program:

- 562 SBIR

Total 562

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	66489	34135	20379	0	0	0	8149	17348	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	7053	10087	61448	72125	93784	94061	77023	60858	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	10097	13129	24363	19222	32238	31302	32460	34454	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 #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes), 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).

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Diagnostics	314	388	609	610

FY 2004 Accomplishments:

- 314 Chemical Warfare Agent Defense, Medical Diagnostics - Developed and tested a non-invasive prototype instrument that measures blood gases via finger, ear, or toe.

Total 314

FY 2005 Planned Program:

- 388 Diagnostic Technologies - Perform advanced research aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Continue experiments focusing on detecting sulfur mustard exposure. Continue developing automation/high throughput strategy for cholinesterase assay. Continue development of alternate sample collection/extraction technology. Initiate lab based studies to assess the development of a genomics-based diagnostic screening test for chemical warfare agent exposure.

Total 388

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

DATE: **February 2005**

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:

- 609 Diagnostic Technologies - Continue advanced research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Continue experiments focusing on detecting sulfur mustard exposure. Expand studies evaluating automation/high throughput strategy for cholinesterase assay. Continue development of alternate sample collection/extraction technology. Continue lab based studies to assess the development of a genomics-based diagnostic screening test for chemical warfare agent exposure.

Total 609

FY 2007 Planned Program:

- 610 Diagnostic Technologies - Validate standard TB MED 296 hydrolysis product assays using alternate sample collection/extraction technology of CW agents from biological fluids. Continue applied research experiments aimed at developing detection methods in clinical samples for metabolites, adducts and/or other relevant biomarkers resulting from CW agent exposure. Finalize automation/high throughput experiments for cholinesterase assay. Continue lab based studies developing a genomics-based diagnostic screening test for chemical warfare agent exposure. Continue studies incorporating Walter Reed Army Institute of Research (WRAIR) whole blood cholinesterase assay into a hand held platform. Complete animal studies for detecting biomarkers of CW agent exposure in biological samples.

Total 610

	FY 2004	FY 2005	FY 2006	FY 2007
Emerging Threats	1300	1256	10658	2034

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TC3**

FY 2004 Accomplishments:

- 1000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Evaluated the efficacy of candidate bioscavengers for protection against non-traditional nerve agents in multiple animal models.
- 300 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Evaluated the efficacy of the FDA-approved oxime treatment, pralidoxime chloride (2-PAM), against biochemical and behavioral effects induced by repeated low level exposure to chemical warfare nerve agents in guinea pigs.

Total 1300

FY 2005 Planned Program:

- 1256 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Evaluate 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 1256

FY 2006 Planned Program:

- 1958 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.

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

DATE: **February 2005**

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):

- 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.
- 2000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures - 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 10658

FY 2007 Planned Program:

- 2034 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures - Complete studies of efficacy of human serum butyrylcholinesterase as a bioscavenger for protection against know NTAs in non-human primates.

Total 2034

	FY 2004	FY 2005	FY 2006	FY 2007
Pretreatments	2459	2999	6496	8848

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TC3**

FY 2004 Accomplishments:

- 2459 Nerve Agent Defense, Biological Scavenger - Initiated evaluation of human protein recombinant scavenger. Utilized transgenic animal model to produce adequate amounts of recombinant enzyme scavenger for preclinical testing.

Total 2459

FY 2005 Planned Program:

- 2999 Nerve Agent Defense, Biological Scavenger - Complete evaluation of human protein recombinant scavenger as a nerve agent countermeasure. Initiate preparation of technical data package for transition out of the technology base. Continue to evaluate purification protocols for large scale isolation of human plasma-derived butylcholinesterase (Block I).

Total 2999

FY 2006 Planned Program:

- 6496 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 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).

Total 6496

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

DATE: **February 2005**

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:

- 8848 Nerve Agent, Bioscavengers - Expand recombinant and catalytic bioscavenger (Block II) efficacy and stability studies. Accelerate supportive studies for IND submission for recombinant bioscavenger candidate (Block II). Continue the evaluation of in vivo expression systems for bioscavenger delivery. Continue and extend studies of the 3-D crystallographic structures of human carboxylesterase (CaE) and paraoxynase 1 (PON-1). Extend animal model evaluation and efficacy studies of recombinant and catalytic bioscavengers.

Total 8848

	FY 2004	FY 2005	FY 2006	FY 2007
Therapeutics	6024	8379	6600	7730

FY 2004 Accomplishments:

- 662 Nerve Agent Defense, Nerve Agent Anticonvulsants - Determined efficacy of midazolam anticonvulsant and anticholinergic drug combinations against seizures and lethality produced by all current threat agents in the guinea pig model.
- 520 Nerve Agent Defense, Neuroprotection - Assessed potential neuroprotectant treatments for nerve agent-induced brain pathology in guinea pig model.
- 3690 Nerve Agent Defense, Improved Oxime (DTO CB48) - Initiated efficacy and pharmacokinetic (PK) studies of candidate oxime(s) for use against traditional nerve agents and NTAs in non-human primates and safety/toxicity studies in two species. Continued the down selection process.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA3 - Advanced Technology Development (ATD)**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**
	PROJECT **TC3**

FY 2004 Accomplishments (Cont):

- 334 Vesicant Agent Defense, Vesicant Medical Countermeasures - Pursued development of protective agent against HD-induced skin lesions.
- 383 Vesicant Agent Defense, Cutaneous Therapeutics - Began efficacy tests of promising treatment strategies.
- 435 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continued development of skin and wound decontaminants for organophosphate CW agents. Continued to expand decontamination and detoxification efforts by developing HD decontaminants.

Total 6024

FY 2005 Planned Program:

- 5500 Nerve Agent Defense, Improved Oxime (DTO CB48) - Determine efficacy of oximes against selected NTAs and traditional nerve agents in non-human primates (NHPs) and/or rabbits. Complete correlation of oxime efficacy with pharmacokinetics and AChE reactivation in guinea pigs. Complete pharmacokinetics of candidate in guinea pig and determine pharmacokinetics in non-human primate and/or rabbits. Complete safety/toxicity studies of candidate oximes in mice and guinea pigs. Complete determination of stability of oximes in aqueous solution.
- 678 Nerve Agent Defense, Nerve Agent Anticonvulsants - Assess application of emerging therapy for organophosphate insecticide poisoning to nerve agent exposure. Continue testing of midazolam and anticholinergic drug combinations against seizures and lethality produced by all current threat agents. Initiate PK evaluations of selected anticonvulsants.
- 272 Nerve Agent Defense, Neuroprotection - Initiate PK evaluations of selected neuroprotectants.
- 1176 Vesicant Agent Defense, Vesicant Medical Countermeasures - Initiate PK evaluations of selected antivesicants.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA3 - Advanced Technology Development (ATD)**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**
	PROJECT **TC3**

FY 2005 Planned Program (Cont):

- 481 Vesicant Agent Defense, Cutaneous Therapeutics - Evaluate the efficacy of candidate treatment regimens in promoting improved healing of cutaneous sulfur mustard injuries.
- 272 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Evaluate the ability of Sandia foam combined with wetting solutions to extract agent from under the skin and extend the time delay for effective decontamination against nerve agents, blister agents, and non-traditional agents (NTAs). Compare efficacy of RSDL with other leading skin decontamination products on skin challenge with HD, VX, and NTAs. Evaluate the effectiveness of Reactive Skin Decontamination Lotion (RSDL) and other leading decontamination products on skin that active Topical Skin Protectant (aTSP) was applied prior to CW agent.

Total 8379

FY 2006 Planned Program:

- 900 Improved Oxime - Perform safety testing and dose range study for new compounds in non-human primate model.
- 1900 Nerve Agent Defense, Nerve Agent Anticonvulsants - Continue to assess application of emerging therapy for organophosphate insecticide poisoning to nerve agent exposure.
- 1100 Nerve Agent Defense, Neuroprotection - Complete and compile data for PK evaluations of selected neuroprotectants. Complete evaluation of neurobehavioral protection of dantroline in non-human primates.
- 1300 Vesicant Agent Defense, Vesicant Medical Countermeasures - Continue PK evaluations of selected antivesicants.
- 800 Vesicant Agent Defense, Cutaneous Therapeutics - Evaluate additional commercially available wound healing products in a weanling pig model.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TC3**

FY 2006 Planned Program (Cont):

- 600 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Select a replacement for the M291 Skin Decontamination Kit.

Total 6600

FY 2007 Planned Program:

- 1800 Improved Oxime - Continue to evaluate safety in NHP models. Evaluate and identify optimal dose range.
- 2100 Nerve Agent Defense, Nerve Agent Anticonvulsants - Establish pharmacokinetic and pharmacodynamic parameters of treatment to determine threshold therapeutic drug levels. Determine the optimal therapy (benzodiazepine alone or in combination with an anticholinergic) for effective treatment of seizures under all potential field conditions (immediate or delayed treatment). Refine and demonstrate additional resuscitative technologies that integrate established and emerging anticonvulsant therapeutic modalities into suitable candidate therapies in humans.
- 1200 Nerve Agent Defense, Neuroprotection - Evaluate FDA-approved products shown to be neuroprotective. Perform neurobehavioral assessment of promising compounds from previous evaluation of candidate products in the appropriate guinea pig or non-human primate model. Complete data package for dantroline based on successful conclusion of neurobehavioral studies.
- 1000 Vesicant Agent Defense, Vesicant Medical Countermeasures - Determine in rodents the safety and efficacy of selected compounds. Initiate efforts to develop biological tissue assays for selected compounds.

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

DATE: **February 2005**

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):

- 900 Vesicant Agent Defense, Cutaneous Therapeutics - Rank order the treatment regimens tested to date in the superficial dermal vesicant injury model in weanling pigs, according to their efficacy in improving wound healing of cutaneous vesicant injuries. Use an African green monkey model and hybrid sulfur mustard-thermal burn weanling pig model, evaluate the top 2-3 treatment strategies found to be efficacious in the superficial dermal vesicant injury model in weanling pigs.
- 730 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continue development of an improved product for patient decontamination. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging decontamination and detoxification therapeutic modalities into suitable candidate therapies in humans.

Total 7730

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	107	0	0

FY 2005 Planned Program:

- 107 SBIR

Total 107

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	3643	14426	22157	38324	15417	4965	4991	4980	Cont	Cont
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1402	1391	6509	6529	38669	29081	13962	11952	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	2200	4500	4156	4500	6865	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 the highest probable 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

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Radioprotectants	0	0	0	2200

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

DATE: **February 2005**

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

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

PROJECT: **TR3**

FY 2007 Planned Program:

- 2200 Radioprotectants - Continue further testing a promising candidate drug that was 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-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism, and initial determination of formulation.

Total 2200

C. Other Program Funding Summary:	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MR4 MEDICAL RADIOLOGICAL DEFENSE	0	0	0	7120	15251	15000	11000	4000	Cont	Cont

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	16207	13978	10783	11077	11523	11857	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 group includes funds from the former CM3 project (FY05 and earlier) which funds Pre-Systems Acquisition in support of Consequence Management teams around the nation. The technology transition project also supports Advanced Technology Demonstrations and planning for Advanced Concept Technology Demonstrations in the Experimentation and Technology Demonstration group. The Force Protection group demonstrates and tests technology for Force Protection/Installation Protection and specifically for PM Guardian's Installation Protection Program. The Technology Readiness Assessment group funds 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 for the JPEO. This project also includes the transition of the Portal program from DARPA.

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

DATE: February 2005

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 2004	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - EXPERIMENT & TECH DEMO	0	0	8670	6282

FY 2006 Planned Program:

- 1530 ACTD Candidate - Perform candidate technology maturation testing in preparation for a FY07 ACTD candidate, such as the DARPA Portal program.
- 1563 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.
- 1530 ACTD Testing - Execute the MARS Unmanned Aerial Vehicle (UAV) program testing CBRN detection technologies for use on small UAVs dedicated to CBRN passive defense or CBRN consequence management, reconnaissance and surveillance applications.
- 2000 Biological Warfare Defense Initiative - Demonstrate prototype medical and disease surveillance system, ARGUS, for a Combatant Commander. Develop and refine a Biological Warfare Defense Exercise for testing Joint Operational Concepts for Biological Warfare Defense associated with Biological Defense Fusion Cell concept. Initiate development of a personnel infrared scanning system for detection of exposure to biological agents.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TT3**

FY 2006 Planned Program (Cont):

- 2047 Non Standard Equipment Review Panel testing - Perform testing on non-warfighter Chemical and Biological Defense (CBD) equipment in support of Joint Program Executive Office. Initiate testing on Weapons of Mass Destruction - Civil Support Team equipment already fielded CBD equipment. Initiate testing on First Responder CBD equipment for Installation Protection Program.

Total 8670

FY 2007 Planned Program:

- 1530 ACTD Candidate - Perform candidate technology maturation testing in preparation for a FY08 ACTD candidate.
- 1114 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.
- 1530 ACTD Testing - Continue the MARS Unmanned Aerial Vehicle (UAV) program testing CBRN detection technologies for use on small UAVs dedicated to CBRN passive defense or CBRN consequence management, reconnaissance and surveillance applications.
- 2108 Non Standard Equipment Review Panel testing - Continue testing on non-warfighter Chemical and Biological Defense (CBD) equipment in support of Joint Program Executive Office. Continue testing on Weapons of Mass Destruction - Civil Support Team equipment already fielded CBD equipment. Continue testing on First Responder CBD equipment for Installation Protection Program.

Total 6282

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

DATE: **February 2005**

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

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

PROJECT: **TT3**

	FY 2004	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - FORCE PROTECTION	0	0	505	516

FY 2006 Planned Program:

- 505 Force Protection - Demonstrate technology for installation protection program, military postal service. Evaluate alternatives and develop system description for installation protection training system.

Total 505

FY 2007 Planned Program:

- 516 Force Protection - Demonstrate technologies for installation protection training system.

Total 516

	FY 2004	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - TECH READINESS ASSESS	0	0	4567	4714

FY 2006 Planned Program:

- 1015 Technology Readiness Assessment - Complete Technology Readiness Evaluation (TRE) on collective protection equipment.
- 671 Technology Readiness Assessment - Initiate TREs on chemical stand-off detection equipment. Initiate planning for warning and reporting network technologies TRE.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TT3**

FY 2006 Planned Program (Cont):

- 2881 Technology Readiness Assessment - Complete TRE for collective protection. Execute TRE for Joint Biological Stand-off Detection System, initiate planning for second phase of Joint Warning and Reporting Network Technology Readiness Evaluation. Perform test methodology, capability improvements for future systems.

Total 4567

FY 2007 Planned Program:

- 1017 Technology Readiness Assessment - Complete Technology Readiness Evaluation (TRE) on chemical stand-off technologies.
- 999 Technology Readiness Assessment - Conduct TREs on warning and reporting network technologies.
- 2698 Technology Readiness Assessment - Plan Technology Readiness Evaluation for Phase three of Joint Warning and Reporting Network. Plan Technology Readiness Evaluation for increment two of Joint Operational Effects Federation (JOEF). Develop test methodology, test capability for future systems.

Total 4714

	FY 2004	FY 2005	FY 2006	FY 2007
TECHBASE - TECH TRANSITION - WMD-CST	0	0	2465	2466

FY 2006 Planned Program:

- 1472 WMD CST - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**	**TT3**

FY 2006 Planned Program (Cont):

- 774 WMD CST - Develop modifications to commercial systems and technologies in response to specific WMD CST operational requirements.
- 219 WMD CST - Implement modified requirements and transition processes and continue to participate in analysis of alternatives and for follow-on technology insertion options.

Total 2465

FY 2007 Planned Program:

- 1470 WMD CST - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.
- 763 WMD CST - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.
- 233 WMD CST - Implement modified requirements and transition processes and continue to participate in analysis of alternatives and for follow-on technology insertion options.

Total 2466

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DATE: **February 2005**

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

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

PROJECT: **TT3**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14368	16661	24678	25897	26496	14895	14289	27217	Cont	Cont

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

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

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 2004 Actual	FY 2005 Estimate	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	128350	125718	100796	74392	69875	49619	46300	57627	Continuing	Continuing
CA4	CONTAMINATION AVOIDANCE (ACD&P)	20619	38299	22330	1017	8135	12214	5602	0	0	108216
CM4	HOMELAND DEFENSE (ACD&P)	961	0	2632	0	0	0	0	0	0	3593
CO4	COLLECTIVE PROTECTION (ACD&P)	0	0	7605	0	0	0	0	0	0	7605
CP4	COUNTERPROLIFERATION SUPPORT (ACD&P)	14368	16661	24678	25897	26496	14895	14289	27217	Continuing	Continuing
DE4	DECONTAMINATION SYSTEMS (ACD&P)	22270	17463	1015	2034	4576	2545	2269	4082	Continuing	Continuing
IS4	INFORMATION SYSTEMS (ACD&P)	0	4734	0	0	0	0	0	0	0	4734
MB4	MEDICAL BIOLOGICAL DEFENSE (ACD&P)	66489	34135	20379	0	0	0	8149	17348	Continuing	Continuing
MC4	MEDICAL CHEMICAL DEFENSE (ACD&P)	3643	14426	22157	38324	15417	4965	4991	4980	Continuing	Continuing
MR4	MEDICAL RADIOLOGICAL DEFENSE	0	0	0	7120	15251	15000	11000	4000	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2005

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

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

A. Mission Description and Budget Item Justification: Operational forces have an immediate need to survive, safely operate, and sustain operations in a chemical and biological (CB) agent threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high risk missions. This program element supports the Advanced Component Development and 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	131433	104195	85825	74886
Current Biennial Budget Estimates (FY 2006)	128350	125718	100796	74392
Total Adjustments	-3083	21523	14971	-494
a. Congressional General Reductions	-209	-2477	0	0
b. Congressional Increases	0	4000	0	0
c. Reprogrammings	-1297	20000	0	0
d. SBIR/STTR Transfer	-2225	0	0	0
e. Other Adjustments	648	0	14971	-494

Change Summary Explanation:

Funding: FY05 - Congressional increases to enhance development projects (+$4,000K CA4). Congressional general reductions and other adjustments (-$348K CA4; -$414K CP4; -$423K DE4; -$105K IS4; -$833K MB4; -$354K MC4). Reprogramming to align developmental efforts (+$20,000K CA4).

FY06 - Enhance test and evaluation capabilities (+$18,000K CA4; +$1,000K DE4). Enhance developmental efforts in areas of agent detection, early warning and battle management, decontamination, and biological medical countermeasures (+$4,000K CA4; +$7,500K CO4; +$12,600K MB4; +$8,500K MC4). Inflation adjustment (+$330K CA4; +$39K CM4; +$105K CO4; +$365K CP4; +$15K DE4; +$115K MB4; +$335K MC5). Reprioritization of programs within the Chemical Biological Defense Program to provide full funding of high priority developmental items (-$2,494K CA4; -$6,798K DE4; -$37,464K MB4: +$8,823K MC4).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2005

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

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

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	20619	38299	22330	1017	8135	12214	5602	0	0	108216

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) Artemis, (2) Joint Effects Model (JEM), (3) Joint Operational Effects Federation (JOEF), (4) Joint Biological Point Detection System (JBPDS), (5) Joint Biological Point Detection System Block II (JBPDS BLK II), (6) Joint Biological Tactical Detection System (JBTDS), (7) Joint Service Chemical/Biological Agent Water Monitor (JCBAWM), (8) Joint Service Light Nuclear, Biological, Chemical and Reconnaissance System (JSLNBCRS), (9) the Non-Traditional Agent (NTA) Detection Improvement Program, (10) Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV), and (11) the Portable Area Warning and Surveillance System (PAWSS).

Artemis will provide near-real time, autonomous, standoff chemical warfare agent (CW agent) detection and identification capability with 360-degree coverage at ranges of 5 kilometers (km) or more. Full fielding of the operational capability is expected to occur in two increments. Increment I will provide CW agent vapor and aerosol standoff detection and identification capability for fixed sites. Increment II builds upon Increment I and will provide on-the-move CW agent standoff detection capability for platforms such as ground mobile vehicles, ships, rotary wing aircraft, Unmanned Aerial Vehicles (UAV), and Tactical Unmanned Ground Vehicles (TUGV).

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DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**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. The Navy has identified the Aegis class ships for installation of the JBPDS. 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.

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. In conformance with Director, Operational Test and Evaluation (DOT&E) Memorandum dated July 9, 2002, FY04 program funds will support the development of a Whole System Live Agent Testing (WSLAT) capability. DOT&E has directed the JBPDS program undergo WSLAT prior to a program Full Rate Production (FRP) decision being made.

The JCBAWM 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 non-reagent biological detection in water. Increment 4 will provide radiological detection capability in water. Increment 5 integrates all capabilities into one system.

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DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

JEM will be a general purpose, accredited software model for predicting Chemical, Biological, Radiological and Nuclear (CBRN) and Toxic Industrial Chemical (TIC)/Toxic Industrial Material (TIM) 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 including missile intercept, and urban NBC environments (Block II); and building interiors, human performance degradation, waterborne hazards and contagious disease modeling (Block III).

The JBTDS will be a lightweight biological agent detector that will detect, warn and provide a sample isolation capability. The sample isolation feature will collect and preserve a sample for evacuation and analysis. The detector can be networked to provide a cooperative detection capability to increase the probability of warning personnel and reduce the probability of false alarm. Each JBTDS will be capable of acting in two modes: a biological agent detector mode and/or a command module. The command module will be capable of receiving data from the arrayed detectors (3 or more) while being able to control the detectors and track information generated within the network. Control capability will consist of remotely resetting, enabling and disabling the detectors on the network and tracking information generated within the network. The network capabilities will include both hardwire and wireless interfaces to provide maximum flexibility in fixed site and remote application. The required throughput of the system will be consistent with the alert data exchange and archiving requirements.

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DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

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 (POs), Sea Ports of Debarkation (SPODs), mobile forces, medical and automated Tactics, Techniques and Procedures (TTPs) in various levels of fidelity. Block 1 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. Block 2 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 block supports planning for consequence management and development of consequence management for military capabilities. Block 3 will support deliberate planning for operational and strategic users in a non-networked environment; crisis planning for operational users in a non-COE; crisis planning for strategic users in a non-COE and non-Networked environment. The third block extends consequence management capabilities to include civilian facilities.
This program has been transitioned to IS4 beginning FY05.

The JSLNBCRS is a new lightweight NBC detection and identification system and 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 NBCRV is a dedicated system of nuclear and chemical detection and warning equipment, and biological sampling equipment integrated into a high speed, high mobility armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross country routes throughout the battlefield. The NBCRV will meet all requirements contained in the approved requirements document.

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

DATE: **February 2005**

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**

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.

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 Capitol 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.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
STANDOFF CHEMICAL AGENT DETECTION SYSTEM	4589	1752	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2004 Accomplishments:

- 845 ARTEMIS - Continued update of Milestone B program documentation. Performed financial management, scheduling, planning, and reporting. Continued Simulation Based Acquisition activities to reduce cost, schedule, and performance risks; increase the quality, military worth, and supportability of fielded systems; and reduce total ownership costs throughout the system life cycle. Initiated archiving of program documentation.
- 1382 ARTEMIS - Continued update of system architecture, system specification and risk mitigation plan through a Joint Systems Engineering IPT.
- 876 ARTEMIS - Continued test strategy and test methodology development to include simulant to real agent correlation, simulant and test range selection, aerosol and liquid spectra collection. Updated draft TEMP through a Joint T&E IPT.
- 855 ARTEMIS - Continued risk reduction efforts to further reduce overall risk in support of the development of key components of an active emitter multi-wavelength Light Detection and Ranging (LIDAR) technology. Key technology component risk areas are laser reliability with extended operating time, shift of basic LIDAR operating wavelength for optimum performance, and advanced detection/identification algorithms. Demonstrated and validated performance of these components.
- 631 ARTEMIS - Continued support for the development of standoff detection test infrastructure to provide the capability to adequately test ARTEMIS or any active standoff detection system. Supported development of an active standoff chamber for testing ARTEMIS or any active standoff detection system against chemical warfare simulants. Supported development of precise referee systems to support evaluation of ARTEMIS or any active standoff system in an open air simulant test.

Total 4589

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

FY 2005 Planned Program:

- 607 ARTEMIS - Perform program close out and archive the products such as Component Advanced Development Reports, Liquid Agent Spectra Measurements, LIDAR Performance Model, Spectral Algorithm Stimulator Report and Simulant Selection Analysis. Develop reports of major program decisions and lessons learned. Coordinate with DTRA to establish Technology Readiness Level of Frequency Agile LIDAR components. Perform financial management, scheduling, planning and reporting.
- 730 ARTEMIS - Complete system performance modeling activities to evaluate LIDAR performance against the full range of threat agents and to ambient water density and ozone. Tailor the performance analyses to support the on going Standoff Chemical Detection Analysis being led by MIT Lincoln Laboratory. Included will be performance analysis efforts to support an Analysis of Alternatives. The performance analysis products will assist JPEO-CBD in crafting a technical and acquisition way ahead for standoff chemical detection of vapors, aerosols and rains.
- 415 ARTEMIS - Update the Analysis of Alternatives. Collect information from Industry, Academia, and Government agencies to develop an AoA for Standoff Chemical Detection. Integrate the products of the MIT Standoff Chemical Detection Analysis and associated DTRA TRL assessments into the AoA. Investigate alternative technology approaches, potential common solutions to general standoff needs, and system size/weight/cost/performance tradeoffs. Include both fixed site and on-the-move requirements as part of the evaluation.

Total 1752

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	5487	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 3000 JBPDS - Initiate and select spiral improvements to JBPDS Line Replaceable Units (LRUs).
- 1500 JBPDS - Validate system upgrade to Line Replaceable Unit (LRU).
- 987 JBPDS - Provide systems engineering support.

Total 5487

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTOR SYSTEM BLK 2	1817	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2004 Accomplishments:

- 173 JBPDS BLK II - Conducted feasibility study for current and near-future biological point detection systems.
- 316 JBPDS BLK II - Conducted study to examine the additional value obtained through Whole System Live Agent Testing (WSLAT) on biological point detection systems.
- 381 JBPDS BLK II - Performed CB sensor and overarching technology architecture analyses with resultant models to provide cost benefit trade offs associated with the transition of technologies to guide future investments. Evaluated new concepts that would allow the use of emerging technologies for early warning and point detection within the architectural framework.
- 150 JBPDS BLK II - Conducted methodology work in support of WSLAT testing.
- 150 JBPDS BLK II - Conducted initial modeling and simulation efforts in support of WSLAT testing.
- 647 JBPDS BLK II - Provided government engineering, program management, and technical support of WSLAT testing.

Total 1817

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIO TACTICAL DETECTION SYSTEM	0	0	0	1017
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2007 Planned Program:

- 500 JBTDS - Establish Program Office and perform Pre-milestone B activities for new program management start such as acquisition documentation and initiation of PM-IPTs.
- 217 JBTDS - Develop network algorithm to incorporate use of heterogeneous Biological detector for initial JBTDS solution. This process will be leveraged by the Joint Biological Point Detection System and the Joint Point Portal Shield System to provide potential improvements in the probability of detection without changes in hardware.
- 300 JBTDS - Initiate Concept Exploration phase and assess critical item technologies/Line Replaceable Units (LRUs).

Total 1017

	FY 2004	FY 2005	FY 2006	FY 2007
JS CHEMICAL/BIOLOGICAL AGENT WATER MONITOR	0	4000	4060	0
RDT&E Articles (Quantity)	0	24020	0	0

FY 2005 Planned Program:

- 2420 JCBAWM - Congressional Add. Initiate purchase of test items (24,000 test tickets at $0.1K each, $2.4M total; and 20 ticket readers at $1K each, $20K total. Vendors: TBS).
- 1180 JCBAWM - Congressional Add. Establish Program Office and initiate test and evaluation efforts to include preparation of test methodology, design of test set-up and development of equipment specifications.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

FY 2005 Planned Program (Cont):

- 400 JCBAWM - Congressional Add. Initiate systems engineering support.

Total 4000

FY 2006 Planned Program:

- 3500 JCBAWM - Continue test and evaluation efforts. Initiate probability studies.
- 560 JCBAWM - Continue systems engineering support.

Total 4060

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT EFFECTS MODEL	1000	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

FY 2004 Accomplishments:

- 1000 JEM Block I - Generated integrated architecture artifacts (operational, system, and technical views) and updated logistics documentation. Completed the Independent Verification and Validation (IV&V) plan. Continued IV&V activities including detailed physics-based comparison of software to published algorithms. Continued technical data transition of legacy software system models.

Total 1000

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT OPERATIONAL EFFECTS FEDERATION	1875	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 1875 JOEF Block I. Began transition from Advanced Technology Development (ATD). Awarded a BAA contract for prototype development. Developed JOEF prototype based on JOEF Operational Requirements Document (ORD), Concept of Operations (CONOPS), Conceptual Model and Focused Technology Assessment report on fixed sites and medical capabilities. Developed interoperability and integration specifications for interfacing to JEM, JWARN and database management system. Conducted Focused Technology Assessments on capabilities for mobile force missions. Established an earned value management system (EVMS) process.

Total 1875

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

	FY 2004	FY 2005	FY 2006	FY 2007
JS LIGHT NBC RECON SYS (JSLNBCRS)	3579	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 2225 JSLNBCRS - Continued LAV development, design, test site planning, development of integrated training package, and logistics planning.
- 1354 JSLNBCRS - Continued development/design of LAV enhancements, installation of automatic fire suppression system, LAV Generation II upgrades, and test support.

Total 3579

	FY 2004	FY 2005	FY 2006	FY 2007
NBC RECON VEHICLE	3000	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2004 Accomplishments:

- 2138 NBCRV - Initiated and completed software and hardware upgrades. Hardware upgrades included upgrade of the sensor processing group, and development of a laptop based computer. Software upgrades corrected deficiencies identified during Production Qualification Test (PQT) and Limited User Test (LUT).
- 862 NBCRV - Initiated and completed PQT re-testing to support a Low Rate Initial Production (LRIP) Interim Progress Review (IPR).

Total 3000

	FY 2004	FY 2005	FY 2006	FY 2007
NON TRADITIONAL AGENT DETECTION IMPROVEMENT PROGRAM	1439	2906	18270	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 500 NTA - Initiated trade-off studies for Non-Traditional Agents (NTA) to select and test technologies for detection which can be used to augment or improve legacy and developmental detection systems.
- 939 NTA - Initiated the integration of existing NTA technologies into legacy and developmental detection systems. Initiated developmental testing using simulants and live agents.

Total 1439

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

FY 2005 Planned Program:

- 200 NTA - Update 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.
- 2406 NTA - Continue integration of existing selected NTA technologies into legacy and developmental detection systems. Continue developmental testing using simulants and live agents.
- 300 NTA - Provide operational assessment/system engineering efforts for NTA enhanced detection systems.

Total 2906

FY 2006 Planned Program:

- 3027 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.

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2006 Planned Program (Cont):

- 243 NTA - Continue operational assessment/system engineering efforts for NTA enhanced detection systems.

Total 18270

	FY 2004	FY 2005	FY 2006	FY 2007
PORTABLE AREA WARNING AND SURVEILLANCE SYSTEM	3320	2064	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 682 PAWSS - Initiated Modeling and Simulation (M&S) effort of cascading detection methodology.
- 2340 PAWSS - Initiated systems engineering and integration efforts to include efforts for the Chemical and Biological Detection Radar. Initiated and completed initial phase of optical properties study for radar enhancements in algorithm development.
- 298 PAWSS - Initiated limited technology demonstration planning.

Total 3320

FY 2005 Planned Program:

- 225 PAWSS - Complete planning and execution of battlefield simulations.
- 779 PAWSS - Complete system engineering, integration and testing.

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

FY 2005 Planned Program (Cont):

- 1060 PAWSS - Complete limited technology demonstration planning and execution.

Total 2064

	FY 2004	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	21773	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 2000 TT Bio - Initiate 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.
- 1931 TT Bio - Congressional Add. Integrate data from existing biological sensors, medical surveillance, and mobile laboratory systems to detect and confirm releases of biological threat agents.
- 1142 TT Bio - Congressional Add. Integrate processes and report critical information through the Global Command and Control System (GCCS) and into the common operating pictures (COP).
- 2400 pBSCAV - Congressional Add. Initiate small-scale process development/assay qualification and test/evaluate medical defense products against traditional and non-traditional nerve agents.
- 1000 pBSCAV - Congressional Add. Initiate small-scale manufacturing.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

FY 2005 Planned Program (Cont):

- 300 pBSCAV - Congressional Add. Initiate Investigational New Drug (IND) application.
- 9893 EOS (Epidemic Outbreak Surveillance) Project Silent Guardian - Congressional Add. Initiate protocol development and assay optimization.
- 3000 EOS Project Silent Guardian - Congressional Add. Initiate confirmatory analysis, culturing and/or molecular testing in accordance with the gold-standard operating procedures.
- 70 EOS Project Silent Guardian - Congressional Add. Initiate program management/logistics management support.
- 37 EOS Project Silent Guardian - Congressional Add. Initiate confirmatory testing.

Total 21773

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	317	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 317 SBIR

Total 317

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

DATE: **February 2005**

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

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

PROJECT: **CA4**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA5 CONTAMINATION AVOIDANCE (SDD)	117476	65786	95085	83795	101159	59278	55821	14286	Cont	Cont
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	2131	10093	8137	8134	8143	8148	8164	Cont	Cont
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	1102	5913	5183	7151	21142	21254	22410	28576	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	13139	10272	14991	10120	7559	0	0	0	0	56081
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	2085	0	5122	26357	26124	29961	31783	38924	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	14889	55581	3433	12757	12806	12771	12839	0	0	125076
MC0100 JT SVC LIGHT NBC RECON SYS (JSLNBCRS)	36988	50452	71311	60852	55610	56404	93144	108370	Cont	Cont
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	2994	2721	17764	27000	29668	29086	37467	32306	Cont	Cont

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CA4**

D. Acquisition Strategy:

ARTEMIS

This strategy could be implemented if there is a re-initiation of Artemis acquisition program activities. Develop a system specification for Increment I and provide it to industry prior to Milestone B (MS B) to obtain and resolve industry comments. Also brief industry before MS B. Issue a cost-type contract after MS B, for engineering development models in support of the System Development and Demonstration (SD&D) phase with fixed price options for Low Rate Initial Production (LRIP) and Full Rate Production (FRP). Conduct developmental testing and early operational assessments of engineering development models to ensure compliance with the Operational Requirements Document (ORD). After MS C, execute a fixed-price option for LRIP units to support Initial Operational Test & Evaluation (IOT&E). After the FRP Decision Review, execute a fixed price option for the initial production run.

JBPDS

The Joint Biological Point Detection System (JBPDS) utilizes an open systems approach as part of the overall acquisition strategy to expedite fielding of a credible force protection strategy, while ensuring a process is in place to inserting maturing and validated technologies. 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 the testing to launch upgrades of 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.

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

DATE **February 2005**

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
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. The program will build on the DARPA Smart Sensor, technology base, industry opportunities and JBPDS programs to maximize commonality across the biological detection family. Pre-milestone activities to reach Milestone A must be initiated in FY05. Concurrently, concept exploration and tech base activities will be monitored to import the necessary critical detection technologies.
JCBAWM	Increment 1: 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 2: This increment identifies a technology for detecting/monitoring Chemical Warfare Agents (CW agents) in water. Milestone A is planned for FY08. Increment 3: This increment develops a technology to replace Increment 1 with a non-reagent biological detector/monitor in water. Increment 4: This increment develops a detector/monitor for identifying radiological agents in water. Milestone A is planned for FY08. Increment 5: This increment integrates all technologies into one detector/monitor for chemical, biological and radiological agents.

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

DATE: **February 2005**

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**

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 will be a near real-time course of action analysis tool developed in three blocks. It will use 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:

Block 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.

Block II will support deliberate and crisis planning for the tactical users in COE, Non-COE, and Non-Networked environments; 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. Block II also supports planning for consequence management and development of consequence management for military capabilities.

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

DATE: **February 2005**

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

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PROJECT: **CA4**

Block 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 environment. Block III extends consequence management capabilities to include civilian facilities.

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 to Northrop Grumman Mission Systems (NGMS) on 4 March 2004. Initial Operational Capability (IOC), HMMWV/LAV variant, is expected during FY07.

NBCRV — Development of the Nuclear Biological Chemical Reconnaissance Vehicle consists of two parts. Part I is a sensor processing group (SPG) developmental effort, led by JPM NBC Contamination Avoidance. Part II is an integration effort of the SPG into the Stryker NBCRV variant, led by the PM SBCT. The NBCRV will improve the current ability of US forces to detect and report NBC threats. The design and development of the SPG is under contract to CACI Technologies, Inc. The contract is a single year (with four options), Time and Materials contract. Integration of the SPG and vehicle production is under contract to General Dynamics Land System (GDLS).

NTA — The NTA program will use an evolutionary development strategy to identify technologies capable of providing an NTA detection ability to both legacy and developmental detection systems. Tradeoff studies will be conducted, and the promising technologies identified will be tested using simulants and live agents. An initial investigation of the operational potential of the tested NTA detection technologies will also be conducted.

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
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PAWSS — Perform modeling and simulation, system integration, and limited technology demonstration to determine the validity of cascading detection methodology. Develop proposals for a follow-on acquisition program.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **CA4**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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													
SW SB - Support TRA - Tradeoffs	MIPR	RDECOM, APG, MD	U	0	90	2Q FY05	0	NONE	0	NONE	0	90	0
HW SB - AoA	MIPR	Various	U	0	325	2Q FY05	0	NONE	0	NONE	0	325	0
JBPDS													
SW SB - Upgrade Trigger/Detector LRU	MIPR	MIT, Boston, MA	F	0	1000	3Q FY05	0	NONE	0	NONE	0	1000	0
HW SB - Upgrade Collector	SS/CPFF	Texas A&M, College Station, TX	N	0	2000	2Q FY05	0	NONE	0	NONE	0	2000	0
JBTDS													
SW SB - Network Algorithm development	C/CPFF	TBD	C	0	0	NONE	0	NONE	217	1Q FY07	0	217	0
JCBAWM													
HW C - Purchase Test Items	Reqn	TBD	C	0	2420	2Q FY05	0	NONE	0	NONE	0	2420	0
NTA													
HW C - Detector Enhancement	C/CPFF	TBD	C	250	1706	2Q FY05	1000	2Q FY06	0	NONE	0	2956	0
HW S - Technology Down-select Studies - Support	C/CPFF	TBD	C	319	200	2Q FY05	750	2Q FY06	0	NONE	0	1269	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
TT Bio													
TT Bio - Initiate Technology Transition	C/FFP	TBD	C	1880	2000	2Q FY05	0	NONE	0	NONE	0	3880	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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

PROJECT
CA4

I. Product Development - 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 - Integrate data from sensors	MIPR	TBD	U	0	1931	2Q FY05	0	NONE	0	NONE	0	1931	0
TT Bio - Integrate processes	MIPR	TBD	U	0	1142	2Q FY05	0	NONE	0	NONE	0	1142	0
pBSCAV - Small-Scale Process Development/Assay Validation	C/CPFF	TBD	C	0	457	2Q FY05	0	NONE	0	NONE	0	457	0
pBSCAV - Small-Scale Manufacturing	C/CPFF	TBD	C	0	653	4Q FY05	0	NONE	0	NONE	0	653	0
Subtotal I. Product Development:				4584	14653		1750		217		0	21204	

Remarks: JCBAWM - JCBAWM - FY05 - 24,000 test tickets at $0.1K each, $2.4M total; and 20 ticket readers at $1K each, $20K total. Vendors: TBS.

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 2005**

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	250	2Q FY05	0	NONE	0	NONE	0	250	0
ES S - Modeling Support	MIPR	Various	U	0	260	2Q FY05	0	NONE	0	NONE	0	260	0
NTA													
TD/D C - Develop Standard Operating Procedures	MIPR	Various	U	0	0	NONE	1000	3Q FY06	0	NONE	0	1000	0
TT Bio													
pBSCAV - Regulatory Integration, Quality Assurance, & IND Support Efforts	C/CPFF	TBD	C	0	555	3Q FY05	0	NONE	0	NONE	0	555	0
EOS (Epidemic Outbreak Surveillance) - Confirmatory testing	MIPR	Brooks AFB, TX	U	0	37	2Q FY05	0	NONE	0	NONE	0	37	0
Subtotal II. Support Costs:				816	1322		1000		0		0	3138	

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 2005**

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
JBPDS													
OTHT SB - Validate System Upgrades	MIPR	DTC, APG, MD and DPG, UT	U	0	1500	3Q FY05	0	NONE	0	NONE	0	1500	0
JBTDS													
OTHT C - M&S for performance parameters	MIPR	DTRA, Ft. Belvoir, VA	U	0	0	NONE	0	NONE	500	1Q FY07	0	500	0
JCBAWM													
DTE S - Developmental/Operational Testing	MIPR	Various	U	0	1180	3Q FY05	3500	1Q FY06	0	NONE	0	4680	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	3270	1Q FY06	0	NONE	0	3270	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
PAWSS													
OTE S - Limited Technology Demonstration	MIPR	Various	U	298	885	3Q FY05	0	NONE	0	NONE	0	1183	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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
TT Bio													
pBSCAV - Conduct Process Development/Assay Validation Efforts	C/CPFF	TBD	C	0	1480	4Q FY05	0	NONE	0	NONE	0	1480	0
EOS (Epidemic Outbreak Surveillance) - Protocol development	MIPR	Naval Research Laboratory, Washington, DC	U	0	9893	2Q FY05	0	NONE	0	NONE	0	9893	0
EOS (Epidemic Outbreak Surveillance) - Confirmatory analysis	MIPR	Naval Health Research Center, San Diego, CA	U	0	3000	2Q FY05	0	NONE	0	NONE	0	3000	0
Subtotal III. Test and Evaluation:				1008	18638		18770		500		0	38916	

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 2005**

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	442	2Q FY05	0	NONE	0	NONE	0	442	0
JBPDS													
PM/MS S - Engineering Support	MIPR	JPM NBC CA, APG, MD	U	0	987	2Q FY05	0	NONE	0	NONE	0	987	0
JBTDS													
PM/MS SB - Milestone B Preparation and Acquisition Documentation Development	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	0	NONE	300	1Q FY07	0	300	0
JCBAWM													
PM/MS S - Joint Service Support	MIPR	Various	U	0	400	2Q FY05	560	1Q FY06	0	NONE	0	960	0
NTA													
PM/MS SB - Support Services	MIPR	Various	U	160	300	1Q FY05	250	1Q FY06	0	NONE	0	710	0
PAWSS													
PM/MS S - Program Management	MIPR	JPM NBC CA, APG, MD	U	887	450	2Q FY05	0	NONE	0	NONE	0	1337	0
TT Bio													
pBSCAV - Program Management Support	Allot	Chemical Bio Medical Systems, Frederick, MD	U	0	555	2Q FY05	0	NONE	0	NONE	0	555	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

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - 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
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	317	NONE	0	NONE	0	NONE	0	317	0
Subtotal IV. Management Services:				2936	3686		810		300		0	7732	

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

TOTAL PROJECT COST:	9344	38299		22330		1017		0	70990	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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

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

PROJECT: **CA4**

D. Schedule Profile:

	FY 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																																
Component Advanced Development	>>	—	—	4Q																												
Complete Input to MIT Chem Standoff Analysis						2Q																										
Provide Close Out Documentation							3Q																									
Complete Analysis of Alternatives								4Q																								
JBPDS																																
Select JBPDS LRUs For Upgrade						2Q																										
Design and Validate selected Upgrades						2Q	3Q																									
ECP/Sys Documentation for Upgrade via Spares												4Q																				
Multi-service Operational Test and Evaluation (IOT&E) (Phase VI) FOT&E															3Q																	
JBPDSBLK2																																
Conduct Engineering Studies of alternative WSLAT methods		2Q	—	4Q																												
Design and Development of WSLAT facilities		2Q	—	4Q																												

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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			
JBTDS	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestone A Activities & Acq Document Preparation													1Q	—		3Q																
Milestone A Decision																4Q																
Technology Transfer													1Q	—		4Q																
JCBAWM																																
ICD approved			3Q																													
Milestone A Increment 1				4Q																												
Purchase Test Items						2Q	3Q																									
Initiate test and evaluation efforts							3Q	—	—	—	4Q																					
Milestone B Increment 1											4Q																					
JEM																																
BLK I - Software Development	>>	—	—	—	—	—	3Q																									
BLK I - Milestone B Decision		2Q																														
JOEF																																
Concept and Technology Development Phase	>>	—	—	—	—	—	—	4Q																								
Prototype Development		2Q	—	—	—	—	—	4Q																								

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JOEF (Cont)																																
Focused Technology Assessment II (Mobile Forces)		2Q	3Q																													
Focused Technology Assessment III (Other Mobile Forces Models)						2Q																										
BLK I - Milestone B							3Q																									
BLK I - Award Systems Development and Demonstration (SDD) Contract								4Q																								
BLK I - Software Development									1Q	—	—	—	—	—	—	3Q																
BLK I - Early Operational Assessment (EOA)																3Q																
JSLNBCRS																																
Continue Development, Design, and Logistics Planning	1Q	—	—	4Q																												
NBCRSBLKI																																
Fox Trainer Installation at FT Polk		2Q																														
NBCRV																																
Production Qualification Test (PQT)	>>	—	—	4Q																												
Limited User Test (LUT)	1Q																															

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
NBCRV (Cont)																																
NBCRV IPR - LRIP				4Q																												
NTA																																
NTA Tradeoff Studies		2Q	—	4Q																												
Conduct Technology Down-select			3Q	—	1Q																											
IntegrateTechnologies on Selected Systems				4Q	—	—	—	—	2Q																							
Developmental Testing of Technology Systems				4Q	—	—	—	—	—	—	—	4Q																				
Planning for Operational Assessment							3Q	4Q																								
Development of Test Methodology									1Q	2Q																						
Test Equipment Purchase/Fabrication										2Q	3Q																					
Equipment/Chamber Validation											3Q	4Q																				
PAWSS																																
Modeling and Simulation				4Q	—	2Q																										
Limited Technology Demonstration							3Q	4Q																								
TT Bio																																
Developmental Testing (DT)						2Q	3Q																									
pBSCAV - Milestone A				4Q																												

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
TT Bio (Cont)																																
pBSCAV - Conduct Process Development/Assay Validation Efforts						2Q	—	4Q																								
pBSCAV - Conduct Pre-Clinical Studies									1Q	—	—	4Q																				
pBSCAV - Conduct Phase 1 Clinical Safety Study											3Q	—	—	2Q																		
EOS - Development/Assay Validation Efforts						2Q	3Q																									

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	961	0	2632	0	0	0	0	0	0	3593

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.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	961	0	2632	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 100 WMD CST - Initiated Phase II HAPSITE (Gas Chromatograph Mass Spectrometer) component testing.
- 486 WMD CST - Initiated component level testing for Unified Command Suite (UCS) Increment I.
- 375 WMD-CST - Initiated component level testing for Analytical Laboratory System (ALS) Block I.

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

DATE: **February 2005**

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 2004 Accomplishments (Cont):
Total 961

FY 2006 Planned Program:

- 2482 WMD-CST - Develop and test CBRN computer based training capability.
- 150 WMD-CST - Provide Government Engineering and Planning Support.

Total 2632

C. Other Program Funding Summary:	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CM5 HOMELAND DEFENSE (SDD)	945	17761	395	0	0	0	0	0	0	19101
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1525	1352	1557	1558	0	0	0	0	0	5992

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CM4**

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 Block I:
The ALS Block 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).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **CM4**

I. Product Development	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 - CBRN Computer Based Training Capability	C/FFP	TBS	C	0	0	NONE	1982	2Q FY06	0	NONE	0	1982	0
Subtotal I. Product Development:				0	0		1982		0		0	1982	

Remarks:

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
WMD CST													
OTHT SB - COTS Chem Bio Training Device	C/FFP	TBS	U	0	0	NONE	500	2Q FY06	0	NONE	0	500	0
Subtotal III. Test and Evaluation:				0	0		500		0		0	500	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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 Training Device	MIPR	Aberdeen Proving Ground, MD	U	0	0	NONE	150	2Q FY06	0	NONE	0	150	0
Subtotal IV. Management Services:				0	0		150		0		0	150	

Remarks:

TOTAL PROJECT COST:	0	0		2632		0		0	2632	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
WMD CST																																
ALS BLK I PROGRAM	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q																
Block I - Technology Screening	>>	—	—	—	1Q																											
Block I - IPR - Stakeholder					1Q																											
Block I - IPR - MDA						2Q																										
Block I - Component Testing			3Q	—	—	3Q																										
Block I - Final Component Down-select			3Q	—	—	3Q																										
Block I - System Prototyping						2Q	3Q																									
Block I - Milestone C - Full Rate Production										2Q																						
UCS INCREMENT I PROGRAM	1Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2Q																
Incr I - CPD Approval					1Q																											
Incr I - Design Engineering and Documentation						2Q																										
Incr I - Prototyping-Vehicle Installation						2Q																										
COTS - GOTS PROGRAM	>>	—	—	—	—	—	—	—	1Q																							
Testing - Phase II HAPSITE Multi-Service				4Q	—	—	—	—	1Q																							

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	7605	0	0	0	0	0	0	7605

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 2005**

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 CP. 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 2004	FY 2005	FY 2006	FY 2007
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	0	0	7605	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 834 JECP - Establish a Project Management Office (PMO) and System Engineering, Product Support, and Test & Evaluation Integrated Product Teams (IPT). Institute associated charters identifying roles and responsibilities. Initiate development of a Single Acquisition Management Plan (SAMP), that will provide a permanent record of all relevant program information in a single document.

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

DATE: **February 2005**

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):

- 1195 JECP - Conduct a tailored Analysis of Alternatives (AoA) leveraging the market survey, test results and lessons learned from the FY05 Collective Protection (ColPro) Technology Readiness Evaluation (TRE). Collaborate with the JRO Shield Integrator in preparing acquisition documentation and decision review package for Milestone (MS) A.
- 996 JECP - Provide PMO and subject matter expert support to the Joint Requirements Office (JRO) in development of the Concept of Operation (ConOps) and the Capability Development Document (CDD). Develop the Systems Engineering Management Plan (SEMP) and the initial Test & Evaluation Master Plan (TEMP) along with requisite MS B documentation, including but not limited to: the Acquisition Strategy, APB, Programmatic Environment Safety and Occupational Health Evaluation (PESHE), Logistics Analysis, Program Protection Plan, and a validated Life Cycle Cost Estimate.
- 4580 JECP - Translate the JRO/User developed ConOps and CDD into a Work Breakdown Structure leading to a Statement of Objectives (SOO) and a Performance Specification (P-Spec). Establish a Risk Management Plan and conduct an initial risk analysis. Award a prototype development contract. Initiate DT testing of prototypes.

Total 7605

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

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CO5 COLLECTIVE PROTECTION (SDD)	2833	2534	671	11697	21738	27992	20371	19225	Cont	Cont
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	11825	2166	0	0	0	0	0	0	0	13991

D. Acquisition Strategy:

JECP

Pursue an incremental development strategy based on the JRO/User developed capability documents. Conduct a tailored AoA leveraging the market survey, test results, and lessons learned from the FY05 Collective Protection Technology Readiness Evaluation (ColPro TRE). Following MS B, use a Statement of Objectives (SOO) and P-Spec to award competitive cost plus incentive type contract(s) to develop prototypes for Developmental Testing (DT) and EOA. Conduct an Operational Assessment (OA) prior to MS C. Following MS C, exercise contract option for Low Rate Initial Production (LRIP) to support DT and Initial Operational Test and Evaluation (IOT&E). After a successful full rate production decision, award a competitive fixed price production contract with multi-year options and product improvement incentives.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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 - Prototype Contract	C/CPIF	TBS	C	0	0	NONE	3975	3Q FY06	0	NONE	0	3975	0
Subtotal I. Product Development:				0	0		3975		0		0	3975	

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
JECP													
TD/D S - Milestone Documentation	MIPR	Various	U	0	0	NONE	2191	1Q FY06	0	NONE	0	2191	0
Subtotal II. Support Costs:				0	0		2191		0		0	2191	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - Prototype Testing	C/CPIF	TBS	C	0	0	NONE	605	3Q FY06	0	NONE	0	605	0
Subtotal III. Test and Evaluation:				0	0		605		0		0	605	

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
JECP													
PM/MS S - Project Management Office (PMO) and IPT Support	MIPR	Dahlgren, VA	U	0	0	NONE	834	1Q FY06	0	NONE	0	834	0
Subtotal IV. Management Services:				0	0		834		0		0	834	

Remarks:

TOTAL PROJECT COST:	0	0		7605		0		0	7605	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JCPE																																
Develop Improved Liner-Mat/Constr/Closures	>>	—		4Q																												
Develop and Test Switchover/Pressure Regulator	>>	—		4Q																												
Develop and Test Dust and Sand Mtr/Blwr Hose Kit	>>	—		4Q																												
Develop and Test Timer-M28 CPE/CBPS Airlocks	>>	—		4Q																												
Develop and Test 100/200 CFM Gas Filters-TICs	1Q	—		4Q																												
Develop and Test Radiant Barrier Matl-TEMPER	>>	—		4Q																												
JECP																																
AoA									1Q																							
MS-A Decision									1Q																							
Complete CDD										2Q																						
SOO and P-Spec									1Q	2Q																						
Prototype Contract RFP										2Q	3Q																					

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 (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)																																
MS-B TEMP									1Q	—		3Q																				
MS-B Decision												3Q																				
Prototype Contract Award												3Q																				
Prototype Development and DT												3Q	—	—	—	—	—	2Q														

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	14368	16661	24678	25897	26496	14895	14289	27217	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)

DATE
February 2005

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 for Defense 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 for Defense 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.

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.

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

DATE
February 2005

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 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.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
CONTAMINATION AVOIDANCE AT SEAPORTS OF DEBARKATION (CAS	10755	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 2017 Contamination Avoidance at Seaports of Deparkation (CASPOD) ACTD (DTO JD23) - Finalized system integration and system test efforts of sensor, alarm, and warning device hardware with Command and Control software.
- 3200 (CASOPD) ACTD (DTO JD23) - Performed Military Utility Assessment (MUA) of CASPOD technologies during the CASPOD final demonstration.
- 1200 CASPOD - Completed techniques, tactics, and procedures for the use of the CASPOD ACTD technologies. Completed training plan and documentation for final demonstration. Conducted program integration tasks.

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

DATE: **February 2005**

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 2004 Accomplishments (Cont):

- 938 CASPOD - Initiated transition and residual support planning. Provide logistic support for initial year of residual phase.
- 3400 CASPOD - Conducted final demonstration, acquired and transported test equipment, cargo containers, vehicles, sealift ship, and provided for travel of users and other logistics support items.

Total 10755

	FY 2004	FY 2005	FY 2006	FY 2007
COUNTERPROLIFERATION ACTD	0	16524	24678	25897
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 730 Chemical Biological Radiological Nuclear (CBRN) Unmanned Ground Reconnaissance (CUGR) ACTD - Initiate program management and planning, documentation, Integrated Product Team (IPT) meetings, technical liaisons and transition planning.
- 1412 CUGR ACTD - Initiate Concepts-of-Operations (CONOP) and techniques, tactics, and procedures (TTP) development, operational test planning and execution.
- 1119 CUGR ACTD - Initiate Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing.
- 6435 CUGR ACTD - Initiate JCSD prototyping, technical testing and integration.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CP4**

FY 2005 Planned Program (Cont):

- 266 CUGR ACTD - Initiate modification of Joint Service Light Nuclear Biological And Chemical Reconnaissance System (JSLNBCRS) shelter design, fabricate and integrate on High Mobility Multipurpose Wheeled Vehicles (HMMWVs).
- 1784 CUGR ACTD - Initiate CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration.
- 1421 Contamination Avoidance at Seaports of Debarkation (CASPOD) ACTD (DTO JD23) (BCA#34) - Execute residual support for CASPOD fielded technologies.
- 1422 CASPOD ACTD (DTO JD23) (BCA#34) - Complete transition planning, acquire logistics support, and complete logistics support planning.
- 1935 Biological Warfare Countermeasures Initiatives (BWCI) - Support United States Pacific Command (PACOM) Biological Warfare Countermeasures Initiative. Conduct fusion cell concept exercise as it transitions from Advanced Technology Development.

Total 16524

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

DATE
February 2005

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:

- 1491 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.
- 1491 CASPOD ACTD (DTO JD23) (BCA#34) - Finalize lessons learned, incorporate into ACTD final report, complete service doctrinal changes and techniques, tactics, and procedures changes.
- 1341 (CUGR) ACTD - Continue program management and planning, documentation, IPT meetings, technical liaisons and transition planning.
- 6300 CUGR ACTD - Continue Concepts-of-Operations (CONOP) and techniques, tactics, and procedures (TTP) development, operational test planning and execution.
- 2545 CUGR ACTD - Continue Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing.
- 5711 CUGR ACTD - Complete JCSD prototyping, technical testing and integration.
- 345 CUGR ACTD - Continue modification of JSLNBCRS shelter design, fabricate and integrate on HMMWVs.
- 1682 CUGR ACTD - Continue CBRN Unmanned Ground Vehicle (CUGV) systems engineering, prototyping, technical testing and integration.
- 263 CUGR ACTD - Initiate CUGR residual support for extended user evaluation.
- 3509 Chemical Biological Training System (CBTS) ATD - Demonstrate Chemical Biological Training System for use at Ft. Leonard Wood. Initiate Chemical Biological Networked Early Warning System (CBNEWS) using tactical radar for early tactical warning of chemical attack.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CP4**

FY 2006 Planned Program (Cont):
Total 24678

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.
- 5804 CUGR ACTD - Continue Concepts-of-Operations (CONOPs) and techniques, tactics, and procedures (TTPs) development, operational test planning and execution.
- 327 CUGR ACTD - Complete Joint Contaminated Surface Detector (JCSD) systems engineering and technical testing.
- 98 CUGR ACTD - 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.
- 658 CUGR ACTD - Continue CUGR residual support for extended user evaluation.
- 8859 Chemical Biological Networked Early Warning System (CBNEWS) ATD - Complete technology demonstration.
- 8279 Situational Awareness and Response Network (STARNET) ACTD - Initiate Combatant Commands (COCOM) information technology system for biological defense fusion cell, that fuses medical, environmental, intelligence, law enforcement, and weather data for continuous situational awareness monitoring.

Total 25897

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

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007
RESTOPS ACTD	3613	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 2368 Restoration of Operations (RestOps) ACTD - Completed procurement and contractor logistics support services for residual support on selected technologies.
- 1245 RestOps ACTD - Finalized Lessons learned, incorporated into ACTD final report, completed service doctrinal changes and Techniques, Tactics, and Procedures changes.

Total 3613

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	137	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**CP4**

FY 2005 Planned Program:

- 137 SBIR

Total 137

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

CPSP ACTD

This project is a generic block description for future ACTD and ATDs. The CUGR ACTD will execute its demonstration phase in 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 2005**

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	2545	2Q FY06	327	2Q FY07	0	3991	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	1682	1Q FY06	907	1Q FY07	0	4373	0
HW S - Develop CB Training system	WR	DTRA, Alexandria, VA	U	0	0	NONE	1500	2Q FY06	0	NONE	0	1500	0
HW S - Develop STARNET system	Allot	Air Force - AFRL - Wright Patterson AFB, OH	U	0	0	NONE	0	NONE	8279	2Q FY07	0	8279	0
HW S - Complete CBNEWS ATD	Allot	Army - RDECOM, Aberdeen Proving Ground, MD	U	0	0	NONE	2009	2Q FY06	8859	2Q FY07	0	10868	0
HW C - CUGR - JCSD Prototyping	Allot	Army - RDECOM, Aberdeen Proving Ground, MD	U	0	6435	2Q FY05	5711	2Q FY06	0	NONE	0	12146	0
Subtotal I. Product Development:				0	9604		13792		18470		0	41866	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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	614	1Q FY06	580	1Q FY07	0	1609	0
ILS C - CUGR CONOPS and doctrine development	Allot	USA Chemical School Ft Leonard Wood, MO	U	0	997	1Q FY05	800	1Q FY06	122	1Q FY07	0	1919	0
ILS S - CASPOD Complete residual support	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	1421	2Q FY05	1491	2Q FY06	0	NONE	0	2912	0
ILS S - CASPOD Finalize doctrine and lessons learned	Allot	Army - CHEMSCHOOL, Ft Leonard Wood MO	U	0	1422	2Q FY05	1491	2Q FY06	0	NONE	0	2913	0
ILS C - CUGR - JCSD Residual Support	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	263	1Q FY06	658	1Q FY07	0	921	0
Subtotal II. Support Costs:				0	4255		4659		1360		0	10274	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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	1Q FY06	5102	1Q FY07	0	9988	0
Subtotal III. Test and Evaluation:				0	0		4886		5102		0	9988	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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	1341	2Q FY06	965	2Q FY07	0	3036	0
PM/MS S - BWCI - Program Management	MIPR	PACOM - Camp Smith Hawaii	U	0	1935	1Q FY05	0	NONE	0	NONE	0	1935	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	137	NONE	0	NONE	0	NONE	0	137	0
Subtotal IV. Management Services:				0	2802		1341		965		0	5108	

Remarks:

TOTAL PROJECT COST:	0	16661		24678		25897		0	67236	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
CASPOD																																
Training	>>	—	—	4Q																												
Demonstration				4Q																												
Residual Support	1Q	—	—	—	—	—	3Q																									
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																
RESTOPS																																
Fielding Support (CLS)	>>	—	—	—	—	—	3Q																									

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	22270	17463	1015	2034	4576	2545	2269	4082	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 the following programs: Joint Service Sensitive Equipment Decontamination (JSSED), Joint Platform Interior Decontamination (JPID), and Joint Service Family of Decontamination Systems (JSFDS). The JSFDS program consists of the Joint Service Personnel/Skin Decontamination System (JSPDS), Joint Service Transportable Decontamination Systems, a Small-scale (JSTDS-SM) and a Large-scale (JSTDS-LG), Joint Portable Decontamination Systems (JPDS) (formerly known as Joint Service Man-Portable Decontamination System) and the Joint Service Stationary Decontamination System (JSSDS).

The initial increments for JSPDS and JSSDS will provide the warfighter with an enhanced fixed site and personnel decontamination capability. Follow-on increments will increase fielded capability through technology insertion.

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

DATE: **February 2005**

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

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
JS FAMILY OF DECON SYSTEMS (JSFDS)	7137	10882	1015	2034
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 2025 JSFDS/JSTDS-SM - Performed market survey, finalized Test and Evaluation Master Plan (TEMP), performance specification, down-selection test methodology, System Acquisition Management Plan (SAMP) and Request for Proposal for JSTDS Small Scale to support Milestone (MS) B.
- 400 JSFDS/JSPDS - Performed compatibility testing of reactive skin decontamination lotion with currently fielded decontaminant to identify and mitigate safety risks to the user.
- 2048 JSFDS/JSPDS - Finalized TEMP, SAMP and other program documentation to support a MS B decision for transition to SDD.
- 540 JSFDS/JPDS - Reviewed feasibility of requirements and established acquisition strategy for the Joint Portable Decontamination System (JPDS).

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

DATE: **February 2005**

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 2004 Accomplishments (Cont):

- 595 JSFDS/JSTDS-LG - Reviewed feasibility of requirements and established acquisition strategy for the JSTDS Large Scale.
- 521 JSFDS/JSSDS - Evaluated feasibility of meeting JSSDS requirements and established acquisition strategy.
- 1008 JSFDS - Performed reliability testing of the multi-purpose decontamination system to support the Senior Readiness Oversight Council's urgent need. Performed simulant and live agent decontamination testing and shelf life testing of DF-200.

Total 7137

FY 2005 Planned Program:

- 7282 JSFDS/JSTDS-SM - Perform down-selection testing (DT I) on four candidate JSTDS-SM decontamination systems for Low Rate Initial Production (LRIP) contract award. DT I includes live agent efficacy testing, material compatibility testing, and reliability testing.
- 200 JSFDS/JSTDS-SM - Develop logistics documentation and perform training to support testing for JSTDS-SM.
- 3400 JSFDS/JSTDS-SM - Update SAMP, TEMP and other program documentation to support MS C LRIP for JSTDS-SM.

Total 10882

FY 2006 Planned Program:

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

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

DATE: **February 2005**

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 (Cont):

Total 1015

FY 2007 Planned Program:

- 334 JSPDS - 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 2034

	FY 2004	FY 2005	FY 2006	FY 2007
JS SENSITIVE EQUIP DECON	15133	6437	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**DE4**

FY 2004 Accomplishments:

- 4272 JSSED - Completed optimization effort of primary solvent-based system.
- 1128 JSSED - Completed System Development & Demonstration (SDD) Statement of Work.
- 2000 JSSED - Finalized program and acquisition documentation to support Increment I of JSSED Operational Requirements Document (ORD).
- 1500 JSSED - Developed, coordinated and processed Increment I TEMP.
- 1360 JPID - Initiated TEMP, SAMP and other program documentation for Milestone (MS) B.
- 500 JPID - Initiated support for the IPT.
- 2073 JPID - Initiated identification of interior platform materials for testing.
- 700 JPID - Initiated market survey for commercial base.
- 100 JPID - Initiated analysis from the market survey to update Analysis of Alternatives (AoA).
- 800 JPID - Initiated Developmental Test (DT) planning.
- 700 JPID - Initiated planning for characteristic study.

Total 15133

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**DE4**

FY 2005 Planned Program:

- 2700 JSSED - Design and fabricate prototypes for Limited Objective Experiment (LOE) (Six units at $450K each).
- 600 JSSED - Conduct LOE and government testing.
- 1137 JSSED - Prepare program documentation for the award of a competitive contract for SDD.
- 500 JPID - Continue support to the IPT including logistics support.
- 900 JPID - Continue studies for interior platform material identification, characteristics analysis and market analysis.
- 250 JPID - Develop the Technology Readiness Evaluation.
- 350 JPID - Finalize program documentation for MS B and initiate program documents/package for MS C.

Total 6437

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	144	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 144 SBIR

Total 144

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

DATE: **February 2005**

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**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
DE5 DECONTAMINATION SYSTEMS (SDD)	5260	4264	19242	10638	5467	14885	15279	7521	Cont	Cont
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)	6194	6401	0	0	0	0	0	0	0	12595
JN0018 SORBENT DECON	1253	0	0	0	0	0	0	0	0	1253

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**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 2005

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

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.

The JPID program will execute using an evolutionary acquisition strategy with technical insertions on an incremental approach. The first increment phase will use COTS and NDI. This approach will meet the warfighter initial requirements resulting in an increase in their operational tempo. The second increment will enhance the initial capability through product improvements and technical insertions. The third increment for decontamination on-the-move will require a comprehensive review of delivery systems using the evolutionary approach.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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
JSSED													
SW SB - JSSED Develop Pre-Clean Capability	C/CPFF	TBD	C	2000	500	2Q FY05	0	NONE	0	NONE	0	2500	0
SW SB - Conduct JPID Industry Day	Allot	TBD	U	700	100	3Q FY05	0	NONE	0	NONE	0	800	0
HW S - JPID Validation	C/CPFF	TBD	C	1940	2400	4Q FY05	0	NONE	0	NONE	0	4340	0
HW S - JPID Material Identification and Analysis for JPID	MIPR	TBD	U	0	1185	3Q FY05	0	NONE	0	NONE	0	1185	0
Subtotal I. Product Development:				4640	4185		0		0		0	8825	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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 JSTDS-SM	MIPR	Various	U	300	200	1Q FY05	0	NONE	0	NONE	0	500	0
JSSED													
ILS S - JPID Develop Acquisition Logistics Plan	Allot	PM Brooks City Base, TX	U	300	300	3Q FY05	0	NONE	0	NONE	0	600	0
Subtotal II. Support Costs:				600	500		0		0		0	1100	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **DE4**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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-SM Down-selection Testing (DT I)	MIPR	Various	U	0	9382	2Q FY05	0	NONE	0	NONE	0	9382	0
DTE S - JSFDS - JSTDS-SM Down-selection Testing (DT I)	C/CPFF	Battelle, Columbus, OH	C	0	900	1Q FY05	0	NONE	0	NONE	0	900	0
OTHT S - JSFDS - JSTDS-SM test planning	MIPR	Various	U	250	50	1Q FY05	0	NONE	0	NONE	0	300	0
OTHT S - JSFDS - JSTDS-SM test planning	C/CPFF	Various	C	650	50	1Q FY05	0	NONE	0	NONE	0	700	0
OTHT S - JSTDS/JSSED/JPID/JSPDS	MIPR	Various	U	0	0	NONE	1015	1Q FY06	2034	1Q FY07	0	3049	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
OTHT S - JPID Developmental and Operational Testing	MIPR	Various	U	300	250	2Q FY05	0	NONE	0	NONE	0	550	0
Subtotal III. Test and Evaluation:				3221	11334		1015		2034		0	17604	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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

PROJECT
DE4

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 - JSTDS-SM Programmatic Support - acquisition documentation development	MIPR	Various	U	190	150	1Q FY05	0	NONE	0	NONE	0	340	0
PM/MS S - JSFDS - JSTDS-SM Programmatic Support - acquisition documentation development	C/CPFF	Various	C	139	150	1Q FY05	0	NONE	0	NONE	0	289	0
JSSED													
PM/MS C - JSSED Operational Test Planning	MIPR	JPM NBCDS, APG, MD	U	0	500	2Q FY05	0	NONE	0	NONE	0	500	0
PM/MS S - JPID - Services Integrated Product Team Support	MIPR	Various	U	0	500	1Q FY05	0	NONE	0	NONE	0	500	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	144	NONE	0	NONE	0	NONE	0	144	0
Subtotal IV. Management Services:				329	1444		0		0		0	1773	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**DE4**

TOTAL PROJECT COST:	8790	17463		1015		2034		0	29302	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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-SM			3Q																													
JSFDS Procure test articles for JSTDS-SM down-selection testing				4Q																												
JSFDS Paper down-selection for JSTDS-SM				4Q																												
JSFDS MS B for JSTDS-SM				4Q																												
JSFDS Down-selection testing (DT I) for JSTDS-SM					1Q —			3Q																								

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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-SM							3Q																									
JSFDS DT II for JSTDS-SM								4Q																								
JSFDS Funding Transition								4Q																								
JSSED																																
Optimization of Fluid System	>>	—	—	—	—	—	3Q																									
Pre Clean Decontamination System			3Q	—	—	—	—	4Q																									
Pre Clean Military Utility Test						2Q	—	4Q																								
JSSED - Design and fabricate prototypes for LOE (6 units at $450K each)						1Q	—	3Q																								
JSSED - Conduct LOE and government testing								4Q																								
JSSED - IPR for SDD Decision								4Q																								
JPID Milestone B preparation			3Q	—	—	—	—	4Q																								
JPID Milestone B								4Q																								
JPID Market Survey				4Q	—	2Q																										
JPID Material Identification				4Q	—	—	—	4Q																								
JPID Industry Days (2)							3Q																									

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

DATE **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	0	4734	0	0	0	0	0	0	0	4734

A. Mission Description and Budget Item Justification:

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

Block 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.

Block 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 block supports planning for consequence management and development of consequence management for military capabilities.

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

DATE
February 2005

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

Block 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 block extends consequence management capabilities to include civilian facilities.

Note: JOEF was funded in FY04 under project CA4.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT OPERATIONAL EFFECTS FEDERATION	0	4698	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 789 JOEF Block I - Conduct Interim Progress Review (IPR). Perform financial management, scheduling, planning, and financial and technical reporting. Use the EVMS process. Complete M/S B acquisition documentation.

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

DATE: **February 2005**

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 Planned Program (Cont):

- 1263 JOEF Block I - Continue development of prototype. Enhance Aerial Ports of Debarkation (APOD) and medical capabilities. Add Sea Ports of Debarkation (SPOD) capabilities. Design open C4ISR architecture. Interface with standard Geographic Information Systems (GIS). Begin process of generating data tables in support of mobile force assessments using models that support the operational commands. Fund the System Engineering, Test and Evaluation, Warfighter and Logistics IPTs.
- 2646 JOEF Block I - Initiate design of mobile force and automated TTP capabilities to the prototype. Begin development of Graphical User Interface (GUI) compatible with JEM and JWARN. Improve the post-process capabilities for the JOEF Measures of Effectiveness. Conduct MS B and transition program to system development and demonstration (SDD).

Total 4698

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	36	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 36 SBIR

Total 36

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

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	1102	5913	5183	7151	21142	21254	22410	28576	Cont	Cont
IS5 INFORMATION SYSTEMS (SDD)	0	20434	77037	25584	17517	8714	5511	3343	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	0	994	2024	2029	1031	0	0	0	0	6078

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**IS4**

D. Acquisition Strategy:

JOEF

JOEF will be a near real-time course of action analysis tool developed in three blocks. It will use 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:

Block 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.

Block II will support deliberate and crisis planning for the tactical users in COE, Non-COE, and Non-Networked environments; 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. Block II also supports planning for consequence management and development of consequence management for military capabilities.

Block 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 environment. Block III extends consequence management capabilities to include civilian facilities.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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	2024	1Q FY05	0	NONE	0	NONE	0	2024	0
SW S - Integration, Interoperability	MIPR	SPAWAR Systems Center, San Diego, CA	U	0	589	1Q FY05	0	NONE	0	NONE	0	589	0
Subtotal I. Product Development:				0	2613		0		0		0	2613	

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
JOEF													
ES S - Integrated Product Teams - System Engineering, Test, and Logistics	MIPR	Various	U	0	569	1Q FY05	0	NONE	0	NONE	0	569	0
Subtotal II. Support Costs:				0	569		0		0		0	569	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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**

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	392	3Q FY05	0	NONE	0	NONE	0	392	0
Subtotal III. Test and Evaluation:				0	392		0		0		0	392	

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
JOEF													
PM/MS S - Program Mgt Office - Planning and Programming	MIPR	Various	U	0	1124	1Q FY05	0	NONE	0	NONE	0	1124	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	36	NONE	0	NONE	0	NONE	0	36	0
Subtotal IV. Management Services:				0	1160		0		0		0	1160	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**IS4**

TOTAL PROJECT COST:	0	4734		0		0		0	4734	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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	>>	—	—	—	—	—	—	4Q																								
Prototype Development		2Q	—	—	—	—	—	4Q																								
Focused Technology Assessment II (Mobile Forces)		2Q	3Q																													
Focused Technology Assessment III (Other Mobile Forces Models)					2Q																											
BLK I - Milestone B							3Q																									
BLK I - Award Systems Development and Demonstration (SDD) Contract								4Q																								
BLK I - Software Development									1Q	—	—	—	—	—	—	3Q																
BLK I - Early Operational Assessment (EOA)																3Q																

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

DATE: **February 2005**

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

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

PROJECT: **MB4**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	66489	34135	20379	0	0	0	8149	17348	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, Next Generation Anthrax (NGA) vaccine, Plague (Yersinia Pestis), Equine Encephalitis and Ricin vaccines.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER FOR BIO SENSORS	1731	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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 2004 Accomplishments:

- 1731 TT Bio - Developed technology to allow American troops to instantly identify chemical and biological hazards on the battlefield.

Total 1731

	FY 2004	FY 2005	FY 2006	FY 2007
TECHNOLOGY TRANSFER MEDICAL SYSTEMS	0	970	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 970 TT Med - Initiate 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 970

	FY 2004	FY 2005	FY 2006	FY 2007
BOTULINUM VACCINE	24692	23592	2033	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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 2004 Accomplishments:

- 456 JVAP - Recombinant Botulinum Vaccine - Continued non-clinical studies and final container stability testing for serotypes A and B.
- 200 JVAP - Recombinant Botulinum Vaccine - Submitted IND application for serotypes A and B.
- 2048 JVAP - Recombinant Botulinum Vaccine - Initiated Phase 1 clinical trial execution and monitoring for serotypes A and B.
- 12882 JVAP - Recombinant Botulinum Vaccine - Initiated process validation, to include qualification and validation of fermentation and purification processes for the manufacture of serotypes A and B.
- 6229 JVAP - Recombinant Botulinum Vaccine - Initiated manufacturing scale-up on serotypes A and B. Performing manufacturing scale-up resulted in significant cost avoidance over the life of the program. Fewer lots will have to be produced and tested to meet the troop equivalent dose (TED) requirements.
- 2877 JVAP - Biological Process Development - Initiated polyclonal antibody production for proof of concept in non-clinical trials for botulinum antitoxin.

Total 24692

FY 2005 Planned Program:

- 15072 JVAP - Recombinant Botulinum Vaccine - Complete manufacturing process scale-up and continue process validation efforts for serotypes A and B.
- 6320 JVAP - Recombinant Botulinum Vaccine - Continue Phase 1 clinical trial for serotypes A and B and receive interim report in preparation for Milestone B.

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

DATE: **February 2005**

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 Planned Program (Cont):

- 2200 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and continue stability testing for serotypes A and B.

Total 23592

FY 2006 Planned Program:

- 2033 JVAP - Recombinant Botulinum Vaccine - Complete Phase 1 clinical trial and continue non-clinical studies, which will transition to System Development and Demonstration (SDD).

Total 2033

	FY 2004	FY 2005	FY 2006	FY 2007
ENCEPHALITIS VACCINE	5847	0	7000	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 1038 JVAP - Equine Encephalitis Vaccines - Completed assay development and qualification and completed lot release testing on the VEE 1 AB vaccine cGMP pilot lot.
- 1915 JVAP - Equine Encephalitis Vaccines - Completed VEE 1 AB vaccine cGMP lot for clinical use.
- 200 JVAP - Equine Encephalitis Vaccines - Submitted IND application for the VEE 1 AB vaccine.

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

DATE: **February 2005**

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 2004 Accomplishments (Cont):

- 2694 JVAP - Equine Encephalitis Vaccines - Initiated Phase 1 clinical trial on the VEE 1 AB vaccine.

Total 5847

FY 2006 Planned Program:

- 5800 JVAP - Equine Encephalitis Vaccines - Initiate manufacturing process validation.
- 1200 JVAP - Equine Encephalitis Vaccines - Complete Phase 1 clinical trial on the VEE 1 AB vaccine.

Total 7000

	FY 2004	FY 2005	FY 2006	FY 2007
NEXT GENERATION ANTHRAX VACCINE	6625	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 4625 JVAP - NGA Vaccine - Completed initiation of Phase 1 clinical trial.
- 2000 JVAP - NGA Vaccine - Continued studies for alternative delivery systems including oral adjuvants and development of an orally delivered anthrax-plague vaccine.

Total 6625

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

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007
PLAGUE VACCINE	27594	9293	5746	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 4040 JVAP - Plague Vaccine - Initiated full-scale manufacturing process development of US candidate.
- 475 JVAP - Plague Vaccine - Continued stability testing of US candidate.
- 3516 JVAP - Plague Vaccine - Continued non-clinical studies of the US candidate.
- 14594 JVAP - Plague Vaccine - Manufactured cGMP pilot lot of US candidate.
- 989 JVAP - Plague Vaccine - Prepared and submitted US candidate IND application to FDA in October 2004.
- 3980 JVAP - Plague Vaccine - Conducted animal safety studies to include repeat-dose toxicity and reactogenicity testing of the US candidate.

Total 27594

FY 2005 Planned Program:

- 6983 JVAP - Plague Vaccine - Conduct Phase 1 clinical trial of US candidate.
- 202 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate.

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

DATE: **February 2005**

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 Planned Program (Cont):

- 100 JVAP - Plague Vaccine - Continue stability testing of US candidate.
- 1010 JVAP - Plague Vaccine - Continue full-scale manufacturing process development of US candidate.
- 998 JVAP - Plague Vaccine - Initiate Phase 2 clinical trial of US candidate.

Total 9293

FY 2006 Planned Program:

- 100 JVAP - Plague Vaccine - Continue stability testing of US candidate.
- 4651 JVAP - Plague Vaccine - Continue full-scale manufacturing process development of US candidate.
- 995 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate and transition into System Development and Demonstration (SDD).

Total 5746

	FY 2004	FY 2005	FY 2006	FY 2007
VACCINE RICIN	0	0	5600	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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:

- 1000 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.
- 3000 JVAP - Ricin Vaccine - Initiate manufacturing process development for vaccine candidate.

Total 5600

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	280	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 280 SBIR

Total 280

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

DATE: **February 2005**

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**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	59706	80478	38930	39466	40741	43498	46080	52906	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	7053	10087	61448	72125	93784	94061	77023	60858	Cont	Cont

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

DATE: **February 2005**

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

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

PROJECT: **MB4**

D. Acquisition Strategy:

VAC BOT	A prime systems contractor will function as the "responsible head" and license holder and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports initial development through FDA licensure.
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 (to Milestone B) of a Venezuelan Equine Encephalitis vaccine, a requirement in the Joint Chiefs of Staff threat list.
VAC NGA	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 completion of NGA vaccine Phase 1 clinical trials.
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.

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

DATE: **February 2005**

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**

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 2005**

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 MED													
Initiate Technology Transition	C/FFP	TBS	C	0	570	2Q FY05	0	NONE	0	NONE	0	570	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	7078	1Q FY05	661	1Q FY06	0	NONE	0	27630	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	2788	1Q FY05	1869	1Q FY06	0	NONE	0	22792	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	10436		6310		0		0	59990	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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**

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
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	3539	1Q FY05	300	1Q FY06	0	NONE	0	8212	0
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	1394	1Q FY05	849	1Q FY06	0	NONE	0	7060	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

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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**

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
Subtotal II. Support Costs:				10141	4933		3039		0		0	18113	

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
TT MED													
Development Testing	MIPR	TBD	U	0	350	2Q FY05	0	NONE	0	NONE	0	350	0
VAC BOT													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	7917	9437	1Q FY05	701	1Q FY06	0	NONE	0	18055	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	2800	1Q FY06	0	NONE	0	5167	0
VAC PLG													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	7266	3172	1Q FY05	1981	1Q FY06	0	NONE	0	12419	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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 RICIN													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	2240	2Q FY06	0	NONE	0	2240	0
Subtotal III. Test and Evaluation:				17550	12959		7722		0		0	38231	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MB4**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 MED													
Management Support and Planning	C/FFP	TBD	C	0	50	2Q FY05	0	NONE	0	NONE	0	50	0
VAC BOT													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	563	731	4Q FY05	60	4Q FY06	0	NONE	0	1354	0
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 - Award Fee (Maximum 10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2446	1706	1Q FY05	140	1Q FY06	0	NONE	0	4292	0
PM/MS S - Program Management	C/CPFF	TBS	C	0	614	1Q FY05	131	1Q FY06	0	NONE	0	745	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	107	0	NONE	42	1Q FY06	0	NONE	0	149	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MB4**

IV. Management Services - 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 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	C/CPFF	TBS	C	305	0	NONE	662	NONE	0	NONE	0	967	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	630	192	4Q FY05	113	4Q FY06	0	NONE	0	935	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	499	288	4Q FY05	170	4Q FY06	0	NONE	0	957	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2300	672	1Q FY05	396	1Q FY06	0	NONE	0	3368	0
PM/MS S - Program Management	C/CPFF	TBS	C	1282	787	1Q FY05	368	1Q FY06	0	NONE	0	2437	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
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

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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

PROJECT
MB4

IV. Management Services - 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	TBS	C	0	0	NONE	252	1Q FY06	0	NONE	0	252	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	280	NONE	0	NONE	0	NONE	0	280	0
Subtotal IV. Management Services:				9402	5807		3308		0		0	18517	

Remarks:

TOTAL PROJECT COST:	80337	34135		20379		0		0	134851	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
TT Bio																																
Developmental Testing (DT)						2Q	3Q																									
pBSCAV - Milestone A				4Q																												
pBSCAV - Conduct Process Development/Assay Validation Efforts						2Q	—	4Q																								
pBSCAV - Conduct Pre-Clinical Studies									1Q	—		4Q																				
pBSCAV - Conduct Phase 1 Clinical Safety Study											3Q	—		2Q																		
EOS - Development/Assay Validation Efforts						2Q	3Q																									
VAC BOT																																
Non-Clinical Testing	>>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q																
Investigational New Drug (IND) Application Submission			3Q																													
Phase 1 Clinical Trial (A/B)			3Q	—	—	—	—		1Q																							
Milestone B						3Q																										
VAC ENC																																
Investigational New Drug (IND) Application				4Q																												

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 ENC (Cont)																																
Phase 1 Clinical Trial				4Q					1Q																							
Milestone B									1Q																							
Initiate Manufacturing Process Validation									1Q			4Q																				
VAC NGA																																
Non-Clinical Testing	>>						3Q																									
Process Development	>>				2Q																											
Phase 1 Clinical Trial	>>								1Q																							
VAC PLG																																
Process Development (Pilot Lot Scale)	>>	3Q																														
Non-Clinical Studies	>>																				4Q											
Current Good Manufacturing Practices (cGMP) Pilot Lot	1Q			4Q																												
Investigational New Drug (IND) Application Submission					1Q																											
Phase 1 Clinical Trial					1Q			4Q																								
Milestone B									1Q																							

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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)																																
Full Scale Manufacturing Process Development		2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q																
VAC RICIN																																
Transition from Tech Base to Advanced Development								4Q	—	2Q																						
Non-Clinical Testing										2Q	—	4Q																				
Process Development											3Q	4Q																				

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	3643	14426	22157	38324	15417	4965	4991	4980	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 Recombinant Bioscavenger (rBSCAV), 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.

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

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007
BIO SCAVENGER	0	0	14011	28622
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 4651 rBSCAV - Initiate small-scale process development/assay qualification and test/evaluate medical defense products against traditional and non-traditional agents.
- 1421 rBSCAV - Initiate pre-clinical safety studies.
- 689 rBSCAV - Initiate Investigational New Drug (IND) application.
- 800 pBSCAV - Complete IND application.
- 3485 pBSCAV - Continue small-scale manufacturing.
- 500 pBSCAV - Initiate and complete pre-clinical safety studies.
- 1715 pBSCAV - Initiate Phase 1 clinical safety study.
- 750 Chemical Surety Facility - Continue test and evaluation of medical chemical defense products under Good Laboratory Practices (GLP) conditions in a chemical agent research and development facility.

Total 14011

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

FY 2007 Planned Program:

- 3253 rBSCAV - Complete small-scale process assay development/qualification and continue to test medical chemical defense products against traditional and non-traditional agents.
- 1759 rBSCAV - Complete pre-clinical studies.
- 723 rBSCAV - Complete and submit IND application.
- 2729 rBSCAV - Initiate large-scale process development and assay validation.
- 4378 rBSCAV - Initiate Phase 1 clinical safety study.
- 12290 pBSCAV - Complete small-scale manufacturing.
- 2105 pBSCAV - Complete Phase 1 clinical safety study.
- 605 pBSCAV - Transition product to Department of Health and Human Services (DHHS).
- 780 Chemical Surety Facility - Continue test and evaluation of medical chemical defense products under Good Laboratory Practices (GLP) conditions in a chemical agent research and development facility.

Total 28622

	FY 2004	FY 2005	FY 2006	FY 2007
IMPROVED NERVE AGENT TREATMENT	0	0	8146	9702
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

FY 2006 Planned Program:

- 658 INATS - Continue IND application process.
- 1785 INATS - Continue cGMP process development.
- 2580 INATS - Continue non-human primate oxime, pre-clinical, acute toxicology, and stability studies.
- 3123 INATS - Initiate Phase 1 clinical safety study.

Total 8146

FY 2007 Planned Program:

- 1010 INATS - Complete non-human primate oxime studies and Phase 1 clinical studies, submit IND, and achieve Milestone B.
- 1529 INATS - Continue cGMP process development.
- 2282 INATS - Continue pre-clinical, acute toxicology, and stability studies.
- 2078 INATS - Initiate definitive animal efficacy studies.
- 2803 INATS - Initiate Phase 2 clinical safety studies.

Total 9702

	FY 2004	FY 2005	FY 2006	FY 2007
MEDICAL CHEMICAL DEFENSE	3643	9468	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

FY 2004 Accomplishments:

- 568 AAS - Continued pre-clinical and acute toxicology studies.
- 723 AAS - Initiated pre-clinical and acute toxicology studies.
- 543 AAS - Initiated Phase 1 clinical study and Investigational New Drug (IND) application.
- 699 INATS - Initiated process development and current Good Manufacturing Practices (cGMP) requirements.
- 1110 INATS - Initiated pre-clinical, acute toxicology and stability studies.

Total 3643

FY 2005 Planned Program:

- 596 AAS - Complete FDA IND/regulatory strategy and submit IND.
- 753 AAS - Complete Phase 1 clinical studies.
- 2744 AAS - Continue pre-clinical and acute toxicology studies.
- 1194 AAS - Initiate process development/current Good Manufacturing Practices (cGMP) requirements.
- 1809 INATS - Continue pre-clinical, acute toxicology and stability studies.
- 1312 INATS - Continue process development and cGMP requirements.
- 576 INATS - Initiate non-human primate oxime studies.
- 484 INATS - Initiate preparation of IND application.

Total 9468

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

	FY 2004	FY 2005	FY 2006	FY 2007
NTA MEDICAL COUNTERMEASURES	0	4840	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 2393 Chemical Surety Facility - Initiate test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility against non-traditional agents.
- 1449 INATS - Continue animal studies to demonstrate efficacy against non-traditional agents.
- 998 AAS - Complete Phase 1 clinical studies of anticonvulsant for treatment of non-traditional agent induced seizures.

Total 4840

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	118	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

FY 2005 Planned Program:

- 118 SBIR

Total 118

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1402	1391	6509	6529	38669	29081	13962	11952	Cont	Cont

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

DATE: **February 2005**

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

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

PROJECT: **MC4**

D. Acquisition Strategy:

BSCAV

Medical Identification and Treatment Systems (MITS) acts 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 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.

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

DATE: **February 2005**

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**

INATS	Medical Identification and Treatment Systems (MITS) acts 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 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.
MEDCHEM	Medical Identification and Treatment Systems (MITS) acts 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 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.

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

DATE: **February 2005**

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**

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

NTA MED

Medical Identification and Treatment Systems (MITS) acts 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 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.

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

DATE
February 2005

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

VES CM

The Medical Identification and Treatment Systems (MITS) Joint Product Management Office is responsible for the development, FDA approval, and fielding of prophylactic and therapeutic drugs and devices, diagnostic equipment, and other life support equipment for protection against and management of injuries caused by chemical, biological and radiological weapons. To accomplish its mission, MITS acts 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 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. Also, FDA approval will be requested. 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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

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

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

PROJECT
MC4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
rBSCAV - Pilot Lot & Small/Large Scale-Up Production	C/CPFF	TBS	C	0	0	NONE	2028	2Q FY06	3853	2Q FY07	0	5881	0
pBSCAV - Small Scale Manufacturing	C/CPFF	TBS	C	0	0	NONE	3165	1Q FY06	10127	1Q FY07	0	13292	0
INATS													
INATS - Pilot Lot & Small/Large Scale-Up Production	C/CPFF	TBS	C	0	0	NONE	1808	2Q FY06	1362	2Q FY07	0	3170	0
MEDCHEM													
AAS and INATS - Manufacturing Processes	C/CPFF	TBS	C	744	2856	2Q FY05	0	NONE	0	NONE	0	3600	0
Subtotal I. Product Development:				744	2856		7001		15342		0	25943	

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MC4**

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
rBSCAV - Regulatory Integration, IND, and NDA Support Efforts	C/CPFF	TBS	C	0	0	NONE	906	2Q FY06	1854	2Q FY07	0	2760	0
pBSCAV - Regulatory Integration, Quality Assurance, & IND Support Efforts	C/CPFF	TBS	C	0	0	NONE	1082	1Q FY06	2250	1Q FY07	0	3332	0
INATS													
INATS - Regulatory Integration, IND, and NDA Support Efforts	C/CPFF	TBS	C	0	0	NONE	1099	2Q FY06	999	2Q FY07	0	2098	0
MEDCHEM													
AAS and INATS - IND Application and Regulatory Support	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	268	700	1Q FY05	0	NONE	0	NONE	0	968	0
Subtotal II. Support Costs:				268	700		3087		5103		0	9158	

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MC4**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
rBSCAV - Test & Evaluation of Pre-Clinical, Animal Efficacy and Clinical Studies	C/CPFF	TBS	C	0	0	NONE	2418	2Q FY06	4945	2Q FY07	0	7363	0
pBSCAV - Conduct Pre-Clinical Studies	C/CPFF	TBS	C	0	0	NONE	487	1Q FY06	0	NONE	0	487	0
pBSCAV - Conduct Phase 1 Clinical Safety Study	C/CPFF	TBS	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	C	0	0	NONE	750	1Q FY06	780	1Q FY07	0	1530	0
INATS													
INATS - Conduct Pre-Clinical, Animal Efficacy and Clinical Studies	C/CPFF	TBS	C	0	0	NONE	4230	2Q FY06	6403	2Q FY07	0	10633	0
MEDCHEM													
AAS - Animal Efficacy, Serum Level and Neuropathological Studies, Non-Human Primate, & Pre-Clinical/Acute Toxicology Studies	MIPR	USAMRICD, Edgewood, MD	U	721	500	2Q FY05	0	NONE	0	NONE	0	1221	0
AAS - IND Application Required Studies	MIPR	Army Research Office, Raleigh, NC	U	0	492	3Q FY05	0	NONE	0	NONE	0	492	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MC4**

III. Test and Evaluation - 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
AAS - Phase 1 Clinical Studies	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	1061	1Q FY05	0	NONE	0	NONE	0	1061	0
AAS - Conduct Animal Efficacy Studies	MIPR	USAMRAA, Frederick, MD	U	0	988	2Q FY05	0	NONE	0	NONE	0	988	0
INATS - Conduct Pre-Clinical/Acute Toxicology and Stability Testing	MIPR	USAMMDA, Fort Detrick, MD	U	607	501	3Q FY05	0	NONE	0	NONE	0	1108	0
INATS - Non-Human Primate and Oxime Studies	MIPR	USAMRAA, Fort Detrick, MD	U	0	1328	2Q FY05	0	NONE	0	NONE	0	1328	0
NTA MED													
Chemical Surety Facility of Med Chem Products Under GLP Conditions	MIPR	USAMRAA, Fort Detrick, MD	U	0	3184	2Q FY05	0	NONE	0	NONE	0	3184	0
AAS Phase I Clinical/Human Safety Studies	MIPR	Chemical Biological Information & Analysis Center, Edgewood, MD	U	0	945	2Q FY05	0	NONE	0	NONE	0	945	0
INATS Pre-Clinical Animal Safety Study	MIPR	USAMRICD, Edgewood, MD	U	0	711	2Q FY05	0	NONE	0	NONE	0	711	0
Subtotal III. Test and Evaluation:				1328	9710		9540		14233		0	34811	

Remarks: BSCAV - FY05 pBSCAV funding is located under CA4, TT Bio.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MC4**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
BSCAV													
PM/MS S - BSCAV - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	280	4Q FY06	572	4Q FY07	0	852	0
PM/MS S - BSCAV - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	420	4Q FY06	858	4Q FY07	0	1278	0
PM/MS S - BSCAV - Program Management Support	C/FFP	TBS	C	0	0	NONE	820	3Q FY06	1278	3Q FY07	0	2098	0
INATS													
PM/MS S - INATS - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	163	4Q FY06	194	4Q FY07	0	357	0
PM/MS S - INATS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	244	4Q FY06	291	4Q FY07	0	535	0
PM/MS S - INATS - Program Management Support	C/FFP	TBS	C	0	0	NONE	602	3Q FY06	453	3Q FY07	0	1055	0
MEDCHEM													
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	317	199	4Q FY05	0	NONE	0	NONE	0	516	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	417	196	4Q FY05	0	NONE	0	NONE	0	613	0
PM/MS S - Program Management Support	C/FFP	TBS	C	471	647	3Q FY05	0	NONE	0	NONE	0	1118	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MC4**

IV. Management Services - Cont.	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
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	118	NONE	0	NONE	0	NONE	0	118	0
Subtotal IV. Management Services:				1205	1160		2529		3646		0	8540	

Remarks:

TOTAL PROJECT COST:	3545	14426		22157		38324		0	78452	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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

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

PROJECT: **MC4**

D. Schedule Profile:

	FY 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																																
rBSCAV - Small Scale Manufacturing									2Q	—			1Q																			
rBSCAV - Conduct Pre-Clinical Studies												4Q	—	2Q																		
rBSCAV - IND Application												4Q	—	—	—	4Q																
rBSCAV - Large-Scale Manufacturing													2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
rBSCAV - Conduct Phase 1 Clinical Trials															3Q	—	—	—	3Q													
rBSCAV - Milestone B																				4Q												
pBSCAV - Milestone A				4Q																												
pBSCAV - Conduct Process Development/Assay Validation Efforts						2Q	—	4Q																								
pBSCAV - IND Application								4Q	1Q																							
pBSCAV - Conduct Pre-Clinical Safety Studies									1Q	—	—	4Q																				
pBSCAV - Conduct Phase 1 Clinical Safety Study											3Q	—	—	2Q																		
CSF - Maintain Chemical Surety Facility						2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q
INATS																																
INATS - Milestone A			3Q																													

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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

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

PROJECT: **MC4**

D. Schedule Profile (cont):

	FY 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 - Conduct Pre-Clinical Studies				4Q	—	—	—	—	—	—	—	—	—	—	—	—	2Q															
INATS - Conduct Process Development and cGMP Requirements				4Q	—	—	—	—	—	—	—	—	—	—	—	—	2Q															
INATS - IND Application							3Q	—	—	3Q																						
INATS - Conduct Phase 1 Clinical Studies									1Q	—	—	2Q																				
INATS - Conduct Phase 2 Clinical Safety Study															3Q	—	3Q															
INATS - Milestone B																4Q																
INATS - Conduct Animal Efficacy Studies																4Q	—	—	—	—	—	—	—	4Q								
MEDCHEM																																
AAS - Pre-Clinical Studies	>>	—	—	—	—	—	—	—	—	—	3Q																					
AAS - Investigational New Drug (IND) Application	1Q	—	—	—	1Q																											
AAS - Conduct Phase 1 Clinical Studies				4Q	—	—	—	4Q																								
AAS - Conduct Process Development/Current Good Manufacturing Practices (cGMP)					1Q	—	—	—	—	—	—	—	—	—	—	—	1Q															

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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

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

PROJECT: **MC4**

D. Schedule Profile (cont):

	FY 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)																																
AAS - Milestone B									1Q																							
INATS - Milestone A			3Q																													
INATS - Conduct Pre-Clinical Studies				4Q	—	—	—	—	—	—	—	—	—	—	—	—	2Q															
INATS - Conduct Process Development and cGMP Requirements				4Q	—	—	—	—	—	—	—	—	—	—	—	—	2Q															
INATS - IND Application							3Q	—	—	3Q																						
CSF - Maintain Chemical Surety Facility						2Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4Q

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

DATE: **February 2005**

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

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

PROJECT: **MR4**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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	0	7120	15251	15000	11000	4000	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 Mission Need Statement for the Department of Defense (DoD) Nuclear, Biological and Chemical Defense. 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 Protectant 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 2004	FY 2005	FY 2006	FY 2007
MEDICAL RADIOLOGICAL PROTECTANT	0	0	0	7120
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**MR4**

FY 2007 Planned Program:

- 3750 RAD PROT - Initiate process development and cGMP (current Good Manufacturing Practices) small scale manufacuturing.
- 2250 RAD PROT - Initiate pre-clinical safety and toxicity studies.
- 720 RAD PROT- Initiate Investigational New Drug (IND) Application.
- 400 RAD PROT - Initiate FDA (Food and Drug Administration) approval documentation to support Phase I clinical study.

Total 7120

C. Other Program Funding Summary: N/A

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**MR4**

D. Acquisition Strategy:

RAD PROT

Medical Identification and Treatment Systems (MITS) acts 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, 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. The Medical Radiological Protectant Drug will be developed using a single step to full capability strategy. Since a Key Performance Parameter (KPP) for this program is approval by the FDA for human use, a spiral evolutionary development strategy is not viable.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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

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

PROJECT: **MR4**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RAD PROT													
RAD PROT - Pilot Lot & Small Scale Up Production	C/CPFF	TBS	C	0	0	NONE	0	NONE	3750	2Q FY07	0	3750	0
Subtotal I. Product Development:				0	0		0		3750		0	3750	

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
RAD PROT													
RAD PROT - Regulatory Integration Support Efforts	C/CPFF	TBS	C	0	0	NONE	0	NONE	560	2Q FY07	0	560	0
Subtotal II. Support Costs:				0	0		0		560		0	560	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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**

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
RAD PROT													
RAD PROT - Test & Evaluation of Products	C/CPFF	TBS	C	0	0	NONE	0	NONE	2250	3Q FY07	0	2250	0
Subtotal III. Test and Evaluation:				0	0		0		2250		0	2250	

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
RAD PROT													
RAD PROT - Program Management Support	Allot	CBMS, Fort Detrick, MD	U	0	0	NONE	0	NONE	560	1Q FY07	0	560	0
Subtotal IV. Management Services:				0	0		0		560		0	560	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&P)	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)**	**MR4**

TOTAL PROJECT COST:	0	0		0		7120		0	7120	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
RAD PROT																																
RAD PROT - Process Dev/Scale Manufacturing													1Q	—	—	—	1Q															
RAD PROT - Safety and Toxicological Studies															3Q	—	2Q															
RAD PROT - Milestone B																		3Q														
RAD PROT - Phase 1 Clinical Trials																		3Q	—	—	—	4Q										
RAD PROT - Phase 2 Clinical Trials																									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 2005

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 2004 Actual	FY 2005 Estimate	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	172505	145794	280908	228319	290942	237065	191023	118205	Continuing	Continuing
CA5	CONTAMINATION AVOIDANCE (SDD)	117476	65786	95085	83795	101159	59278	55821	14286	Continuing	Continuing
CM5	HOMELAND DEFENSE (SDD)	945	17761	395	0	0	0	0	0	0	19101
CO5	COLLECTIVE PROTECTION (SDD)	2833	2534	671	11697	21738	27992	20371	19225	Continuing	Continuing
DE5	DECONTAMINATION SYSTEMS (SDD)	5260	4264	19242	10638	5467	14885	15279	7521	Continuing	Continuing
IP5	INDIVIDUAL PROTECTION (SDD)	37536	23537	20521	17951	12608	3054	3056	1020	Continuing	Continuing
IS5	INFORMATION SYSTEMS (SDD)	0	20434	77037	25584	17517	8714	5511	3343	Continuing	Continuing
MB5	MEDICAL BIOLOGICAL DEFENSE (SDD)	7053	10087	61448	72125	93784	94061	77023	60858	Continuing	Continuing
MC5	MEDICAL CHEMICAL DEFENSE (SDD)	1402	1391	6509	6529	38669	29081	13962	11952	Continuing	Continuing

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
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 2005

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 2005**

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 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	176337	152379	72702	58133
Current Biennial Budget Estimates (FY 2006)	172505	145794	280908	228319
Total Adjustments	-3832	-6585	208206	170186
a. Congressional General Reductions	-279	-18186	0	0
b. Congressional Increases	0	31600	0	0
c. Reprogrammings	-688	-20000	0	0
d. SBIR/STTR Transfer	-2478	0	0	0
e. Other Adjustments	-387	1	208206	170186

Change Summary Explanation:

Funding: FY05 - Congressional increases to enhance development projects (+$26,050K CA5; +$1,000K DE5; +$2,100K IS5; +$2,450K MB5). Congressional reductions (-$12,021K CA5; -$2,979K CM5). Congressional general reductions (-$1,380K CA5; -$534K CM5; -$56K CO5; -$73K DE5; -$530K IP5; -$408K IS5; -$173K MB5; -$32K MC5). Reprogramming to align developmental efforts (-$20,000K CA5).

FY06 - Enhance test and evaluation capabilities (+$11,000K CA5; +$3,000K IS5). Enhance developmental efforts in areas of agent detection, early warning and battle management, decontamination, and biological medical countermeasures (+$6,000K DE5; +$29,000K IS5; +$11,400K MB5). Inflation adjustment (+$1,406K CA5; +$6K CM5; +$10K CO5; +$285K DE5; +$303K IP5; +$1,139K IS5; +$741K MB5; +$96K MC5). Reprioritization of programs within the Chemical Biological Defense Program to provide full funding of high priority developmental items (+$43,541K CA5; -$3,457K CO5: +$7,247K DE5; +$14,782K IP5; +$36,793K IS5; +$45,664K MB5; -$750K MC5).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA5 - System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

Funding (cont.)

FY07 - Enhance test and evaluation capabilities (+$5,000K CA5; +$2,000K IS5; +$2,000K IP5); Enhance developmental efforts in areas of agent detection, decontamination, and collective protection (+$4,000K CA5; +$6,000K DE5; +$10,000K CO5). Inflation adjustment (+$1,406K CA5; +$197K CO5; +$178K DE5; +$301K IP5; +$430K IS5; +$1,210K MB5; +$110K MC5). Reprioritization of programs within the Chemical Biological Defense Program to provide full funding of high priority developmental items (+$49,762K CA5; -$3,076K CO5; -$952K DE5; +$14,680K IP5; +$21,735K IS5; +$55,985K MB5; -$780K MC5).

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	117476	65786	95085	83795	101159	59278	55821	14286	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 Agent Water Monitor (JCBAWM), (6) Joint Contaminated Surface Detector (JCSD), (7) Joint Effects Model (JEM), (8) Joint Service Light Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), (9) Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), (10) Joint Warning and Reporting Network (JWARN), (11) Mobile Chemical Agent Detector (MCAD), (12) Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV), (13) Force Protection - CB Installation/Force Protection Program and (14) the Point Chemical Agent Detector Evaluation (PCADE) Program.

This project includes IBADS continued operational 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 BLKI will replace the IBADS beginning in FY05.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CA5**

The JBPDS suite will be integrated onto Service specific platforms (e.g., JSLNBCRS, NBCRV, ships, etc.), employed at fixed sites (e.g., air bases and ports), and may be deployed as a portable system for expeditionary and forward operating forces. 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.

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)).

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

The JCAD program is employing an incremental acquisition strategy to develop a miniaturized, rugged and portable point chemical agent detector that automatically and simultaneously detects, identifies, quantifies, and alerts in the presence of nerve, blister, and blood chemical warfare agents. Increment 1 will provide warfighter and simple platform mounted systems. Increment 2 will add low concentration detection and expand platform utility. JCAD will be used for aircraft, shipboard, wheeled vehicles, stand alone, and individual soldier applications. JCAD will replace the Automatic Chemical Agent Detector and Alarm (ACADA), Chemical Agent Monitor (CAM), Improved Chemical Agent Monitor (ICAM), and other legacy systems currently used by the individual Services.

The JCBAWM 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 non-reagent biological detection in water. Increment 4 will provide radiological detection capability in water. Increment 5 integrates all capabilities into one system.

The JCSD program will develop a laser interrogation of surface agents system that will operate from host platforms, and will provide non-contact detection of chemical agents on contaminated surfaces. The JCSD will replace the double wheel sample system in the NBCRV and the JSLNBCRS. The JCSD will provide near-term instantaneous detection and identification of chemical agents at vehicle speeds greater than possible with the Double Wheeled Sample System.

The JEM will be a general-purpose, 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). This program has been transitioned to IS5 beginning FY05.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CA5**

The JSLNBCRS is a new lightweight NBC detection and identification system and 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. These systems have detection capabilities 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 1 will provide an initial capability and be used for ground mobile reconnaissance applications. Increment 2 will pursue an evaluation of three commercially available systems with follow-on low-rate production. Increment 3 will assess the potential for integrating detection capabilities in aerial platforms.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**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 MCAD is a passive, standoff system that detects, classifies, identifies and maps chemical agent vapor threats. While operating stationary or on-the-move, MCAD detects agents within its 5 km standoff range. The system can also detect TICs. The mostly Commercial-off-the-shelf (COTS) system includes a Fourier Transform Infrared (FTIR) sensor, TV camera, digital compass, and laptop computer. This system has the flexibility of operating alone or in groups via a Local Area Network (LAN). The MCAD contractor is Northrup Grumman Security Systems Corporation, located in Linthicum, MD.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

The NBCRV is a dedicated system of nuclear and chemical detection and warning epuipment, and biological sampling equipment integrated into the Stryker vehicle chassis and is capable of performing NBC reconnaissance on primary, secondary, or cross country routes throughout the battlefield.

The PCADE program will evaluate emerging technologies for potential insertion into future point chemical agent detection systems.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
INTERIM BIO AGENT DETECTOR SYS (IBADS)	278	289	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 278 IBADS - Continued to provide engineering and technical support to maintain fielded systems. The Navy decommissioned four (4) IBADS.

Total 278

FY 2005 Planned Program:

- 289 IBADS - Complete the decommissioning of the remaining nine (9) shipboard IBADS.

Total 289

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	5657	8860	7446	1017
RDT&E Articles (Quantity)	0	5	0	0

FY 2004 Accomplishments:

- 709 JBPDS BLK I - Completed Biological Aerosol Warning System (BAWS) upgrade for Low Rate Initial Production (LRIP) systems to meet Joint Operational Requirements Document (JORD) objective requirements for detection.
- 4448 JBPDS BLKI - Completed Multi-Service Operational Test and Evaluation (MOT&E) for the Army, Navy, and Air Force (Phases II-V). Provided final System Evaluation Report (SER).
- 500 JBPDS BLK I - Provided systems engineering support.

Total 5657

FY 2005 Planned Program:

- 2810 JBPDS BLKI - Congressional Add. Purchase 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 BLK I - Initiate and select spiral improvements for the JBPDS LRUs to meet objective requirement for number of agents and sensitivity.
- 2550 JBPDS BLK I - Congressional Add. Adapt the Array Biological Sensor as an upgrade to the JBPDS.
- 500 JBPDS BLK I - Provide systems engineering support.

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

DATE: **February 2005**

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 Planned Program (Cont):
Total 8860

FY 2006 Planned Program:

- 1100 JBPDS BLK I - Initiate, select, and validate improved collector.
- 800 JBPDS BLK I - Initiate, develop, and validate embedded training.
- 650 JBPDS BLK I - Support WSLAT execution.
- 350 JBPDS BLK I - Purchase one JBPDS System Support Package ($350K), for support to WSLAT.
- 2000 JBPDS BLK I (T&E Capability) - Prepare preliminary chamber design.
- 154 JBPDS BLK I - Provide system engineering support.
- 2392 JPBDS BLK I - (T&E Capability) - Initiate designs and prepare statements of work and deliverables for contractors. Provide chamber and fixtures, specify instrumentation and control systems.

Total 7446

FY 2007 Planned Program:

- 1017 JBPDS BLK I (T&E Capability) - Finalize designs and prepare statements of work and deliverables for contractors. Provide chamber and fixtures, specify instrumentation and control systems.

Total 1017

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	15645	18036	0	2034
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 8367 JBSDS - Completed development contract award.
- 450 JBSDS - Provided systems engineering support.
- 1200 JBSDS - Completed Production Qualification Test (PQT) and analysis.
- 300 JBSDS - Initiated background test, planning and analysis at multiple locations to refine detection/discrimination algorithm.
- 1628 JBSDS - Completed Milestone B and Milestone C activities.
- 2700 JBSDS - Initiated and completed the prototype upgrade and Engineering Design Test (EDT) planning.
- 1000 JBSDS - Initiated development of Increment II JBSDS system. This includes modeling and simulation analysis and market research.

Total 15645

FY 2005 Planned Program:

- 1550 JBSDS - Complete development contract (including contractor support of Production Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E)).

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

DATE: **February 2005**

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 Planned Program (Cont):

- 450 JBSDS - Provide systems engineering support.
- 2300 JBSDS - Conduct PVT.
- 4300 JBSDS - Conduct Multi-Service Operational Test and Evaluation (MOT&E).
- 1200 JBSDS - Initiate Modeling and Simulation for JBSDS Increment II.
- 8236 JBSDS - Initiate demonstration of Increment II technologies.

Total 18036

FY 2007 Planned Program:

- 2034 JBSDS (T&E Capability) - Develop real-time Man In Simulant Test (MIST) sampling system.

Total 2034

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM INCREMENT II	0	0	20049	42927
RDT&E Articles (Quantity)	0	0	0	18

FY 2006 Planned Program:

- 2000 JBSDS Increment II - Initiate Milestone B (MS B) preparations.
- 1100 JBSDS Increment II - Initiate system development contract solicitation.

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

DATE: **February 2005**

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 (Cont):

- 11846 JBSDS Increment II - Initiate design and development of engineering prototype.
- 450 JBSDS Increment II - Provide systems engineering support.
- 1953 JBSDS Increment II - Initiate supportability strategy.
- 2700 JBSDS Increment II - Initiate agent/simulant correlation.

Total 20049

FY 2007 Planned Program:

- 7620 JBSDS Increment II - Finalize design, conduct critical design review and develop logistics products.
- 600 JBSDS Increment II - Provide systems engineering support.
- 18000 JBSDS Increment II - Initiate fabrication, assembly, and integration of 18 engineering prototypes ($1M each).
- 6707 JBSDS Increment II - Develop and initiate developmental and operational test planning and developmental testing.
- 2000 JBSDS Increment II - Continue agent/simulant correlation.
- 2000 JBSDS Increment II - Initiate chemical biological standoff chamber test capability.
- 2000 JBSDS Increment II - Initiate field simulant challenge test and cloud characterization.
- 2000 JBSDS Increment II - Initiate additional test grid development.
- 2000 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.

Total 42927

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT CHEMICAL AGENT DETECTOR (JCAD)	13575	0	17563	3560
RDT&E Articles (Quantity)	80	0	120	0

FY 2004 Accomplishments:

- 2105 JCAD - Completed EMD hardware and software development.
- 7667 JCAD - Initiated government evaluation of commercial detectors to include production qualification testing (PQT) and chamber design and validation.
- 1200 JCAD - Purchased Increment I commercial systems and support (20 systems each from four vendors; 80 systems total. 20 systems at $8,875 each from vendor one; 20 systems at $25,535 each from vendor two; 20 systems at $12,827 each from vendor three; and 20 systems at $12,743 each from vendor four).
- 2603 JCAD - Initiated systems engineering support for commercial detector evaluation program.

Total 13575

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, performing MOT&E, and preparing test methodology for Increment 2 low-level detection requirements.
- 2178 JCAD - Provide systems engineering support.

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DATE: **February 2005**

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 (Cont):

- 2200 JCAD - Purchase Increment 2 systems and support (120 systems at $13.5K each.
- 2500 JCAD - (T&E Capability) - Design agent simulant dissemination systems, sampling systems, monitoring systems, and establishment of testing, safety and security protocols.

Total 17563

FY 2007 Planned Program:

- 3560 JCAD - Initiate government evaluation of Increment 2 detector.

Total 3560

	FY 2004	FY 2005	FY 2006	FY 2007
JS CHEMICAL/BIOLOGICAL AGENT WATER MONITOR	0	0	4060	7730
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 3450 JCBAWM - Initiate test and evaluation efforts to include developing test methodology for bio warfare agents.
- 610 JCBAWM - Initiate systems engineering support (Government).

Total 4060

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

DATE: **February 2005**

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 JCBAWM - Continue and complete test and evaluation efforts to include validating test methodology and purchasing test instrumentation.
- 800 JCBAWM - Continue systems engineering support (Government).

Total 7730

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT CONTAMINATED SURFACE DETECTOR (JCSD)	4614	0	0	0
RDT&E Articles (Quantity)	1	0	0	0

FY 2004 Accomplishments:

- 1750 JCSD - Completed systems engineering and design, and continued logistics support planning. Built first prototype unit ($500K), and ordered parts for two additional units for laboratory and field testing to support transition to NBC Reconnaissance P3I program.
- 942 JCSD - Continued sensor performance and qualification testing. Initiated modifications to vehicle platform, integrated system in vehicle, and conducted dust/smoke effects testing as well as customer demonstration.
- 961 JCSD - Initiated CB Warfare Agent Detector Chip development efforts.
- 961 JCSD - Initiated Handheld Biological Agent Identifier development efforts.

Total 4614

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

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT: CA5

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT EFFECTS MODEL	15564	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 3212 JEM Block I - Completed the Test and Evaluation Master Plan (TEMP) and further refined the operational assessment and formal test plan. Developed the developmental test plan. Initiated joint interoperability test planning and increased developmental test lab capabilities. Coordinated developmental and operational test events. Initiated a test data gap analysis on CBRN field trials to assess the necessity of further field trial requirements. Selected an Accreditation Agent and initiated development of an Accreditation Plan.
- 6242 JEM Block I - Contractor completed development of engineering builds and initiated development of formal JEM Baseline. Completed Preliminary and Critical Design Reviews. Developed software system engineering documentation. Completed two of five planned development spirals.
- 3024 JEM Block I - Developed detailed Developmental and Operational test plans. Performed Independent Validation & Verification (IV&V) activities during software development. Updated the TEMP and the Verification Validation and Accreditation (VV&A) plan to support MS C. Completed data gap analysis of CBRN/TIC/TIM field trials. Produced IV&V exhibits to support class accreditation. Initiated Government Developmental Testing.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

FY 2004 Accomplishments (Cont):

- 2324 JEM Block I - Initiated development of JEM computer based training / courseware. Continued planning for the software support activity and 24/7 help desk support. Conducted joint service reviews of engineering documentation.
- 563 JEM Block I - Completed required program documentation and attained Milestone B. Performed Information Assurance Assessment. Reviewed and assessed independent model analysis report and initiated acquisition of proprietary source code.
- 199 JEM Block II - Completed Block II Focused Technology Assessment. Conducted Request For Information process, convening oversight panel to examine all current technologies. Held multiple review meetings to produce a new Independent Model Assessment Report.

Total 15564

	FY 2004	FY 2005	FY 2006	FY 2007
JS LIGHT NBC RECON SYS (JSLNBCRS)	16169	15627	9591	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 7083 JSLNBCRS - Completed Light Armored Variant (LAV) integration. Initiated the preparation for LAV #1 Engineering Design Test (EDT). Completed Nuclear, Biological, Chemical Detection, Analysis, and Communication Software (NBCDACS) upgrades.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

FY 2004 Accomplishments (Cont):

- 5951 JSLNBCRS - Initiated Toxic Industrial Chemical (TIC) and Toxic Industrial Material (TIM) software upgrade for CBMS II transition to JSLNBCRS procurement. Initiated improvements to biological detection/identification capability.
- 2375 JSLNBCRS - Initiated Multi-service Operational Test and Evaluation (MOT&E) planning/coordination.
- 760 JSLNBCRS - Provided government systems engineering support.

Total 16169

FY 2005 Planned Program:

- 4842 JSLNBCRS - Continue TICs and TIMs software upgrades for CBMS II transition to JSLNBCRS procurement. Continue improvements to biological detection/identification capability. Initiate Integrated Logistics Support (ILS) of CBMS II.
- 2117 JSLNBCRS - Continue MOT&E planning and preparation.
- 2170 JSLNBCRS - Continue LAV Developmental Test (DT) of sensors and regression testing.
- 3238 JSLNBCRS - Complete LAV integration and conduct contractor Engineering Design Test (EDT).
- 2500 JSLNBCRS - Initiate First Article Test (FAT)/Production Verification Test (PVT) of HMMWV LRIP.
- 760 JSLNBCRS - Provide government systems engineering support.

Total 15627

FY 2006 Planned Program:

- 3501 JSLNBCRS - Complete development and validation of biological detection capability for CBMS II.

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

DATE: **February 2005**

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 (Cont):

- 3120 JSLNBCRS - Initiate additional chemical/Toxic Industrial Chemical (TIC) library for CBMS II.
- 2210 JSLNBCRS - Complete CBMS II software technical transfer and Integrated Logistics Support (ILS).
- 760 JSLNBCRS - Provide government systems engineering support.

Total 9591

	FY 2004	FY 2005	FY 2006	FY 2007
JS LIGHTWEIGHT STANDOFF CHEMICAL AGENT DET (JSLSCAD)	15365	19459	36376	26527
RDT&E Articles (Quantity)	12	9	0	0

FY 2004 Accomplishments:

- 2114 JSLSCAD - Supported Stryker Nuclear Biological Reconnaissance Vehicle (NBCRV) Production Qualification Test and Limited User Test (LUT).
- 1000 JSLSCAD - Continued methodology development to support the comparison of commercially available remote sensing detectors.
- 4122 JSLSCAD - Selected and procured Increment 2 candidate remote sensing detectors and support equipment for testing (six detectors at $387K each from vendor one; six detectors at $300K each from vendor two for a total of 12 detectors).
- 4878 JSLSCAD - Conducted testing of JSLSCAD Increment 1 detectors to support National Research Council (NRC) findings.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

FY 2004 Accomplishments (Cont):

- 2051 JSLSCAD - Initiated modeling and simulation (M&S) efforts to allow evaluation of standoff detectors under various challenge environments.
- 1200 JSLSCAD - Provided government systems engineering support.

Total 15365

FY 2005 Planned Program:

- 3000 JSLSCAD - Continue Increment 1 evaluation to support NRC findings (M&S) and initiate Increment 2 evaluation efforts.
- 9259 JSLSCAD - Initiate evaluation of candidate commercial remote detection systems (Increment 2).
- 4000 JSLSCAD - Procure additional Increment 2 test items and support (three detectors at $387K each from vendor one; three detectors at $300K each from vendor two; and three detectors at $484K each from vendor three for a total of 9 detectors).
- 500 JSLSCAD - Integrate commercial systems into platforms.
- 1500 JSLSCAD - Support remote sensing test facility design and use for testing of commercial detectors.
- 1200 JSLSCAD - Continue to provide government systems engineering support.

Total 19459

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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:

- 10800 JSLSCAD - Continue evaluation of commercial remote detection systems and down-select to a single system (Increment 2).
- 5576 JSLSCAD - Initiate and plan for operational test and evaluation of selected commercial system.
- 4100 JSLSCAD - Continue testing and analysis to support NRC findings and refine modeling techniques.
- 2200 JSLSCAD - Continue integration and support of the commercial remote detection system onto various platforms.
- 1000 JSLSCAD - Initiate Increment 3 technology assessment.
- 1500 JSLSCAD - Initiate product improvement program for Increment 1 detection software.
- 1200 JSLSCAD - Continue to provide government systems engineering support.
- 7900 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.
- 1200 JSLSCAD - (T&E Capability) Coordinate/facilitate subject matter expert support.
- 900 JSLSCAD - (T&E Capability) Initiate purchase of data collection instrumentation.

Total 36376

FY 2007 Planned Program:

- 6100 JSLSCAD - Complete follow-on testing and evaluation of selected commercial remote detection system (Increment 2).
- 6445 JSLSCAD - Continue operational test and evaluation of selected commercial system.
- 4500 JSLSCAD - Complete modeling and simulation verification efforts to support NRC findings.

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

DATE: **February 2005**

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 (Cont):

- 4682 JSLSCAD - Initiate evaluation of Increment 3 systems.
- 1600 JSLSCAD - Continue product improvement program for Increment 1 detection software.
- 1200 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 26527

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT WARNING & REPORTING NETWORK (JWARN)	27243	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 3864 JWARN - Conducted Program Management and Oversight of JWARN and JWARN Initial Capability (JIC) development efforts.
- 2426 JWARN - Continued JIC Component Development.
- 1824 JWARN - Planned for and initiated JWARN Developmental Test/Operational Assessment (DT/OA).

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

FY 2004 Accomplishments (Cont):

- 2000 JWARN - Provided integration support for JWARN with Joint Effects Model (JEM) and Joint Operational Effect Federation (JOEF).
- 5509 JWARN - Integrated JIC with C4I Systems.
- 932 JWARN - Supported Mission Application Software Integration.
- 1824 JWARN - Planned for Operational Assessment
- 8864 JWARN - Developed JWARN Communications Interface Device (JCID)

Total 27243

	FY 2004	FY 2005	FY 2006	FY 2007
MOBILE CHEMICAL AGENT DETECTOR	3366	0	0	0
RDT&E Articles (Quantity)	6	0	0	0

FY 2004 Accomplishments:

- 3211 MCAD - Procured six commercial MCADs ($484K each, $2,904K total) and associated support for testing.
- 155 MCAD - Completed Toxic Industrial Chemical Testing.

Total 3366

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: **CA5**

	FY 2004	FY 2005	FY 2006	FY 2007
POINT CHEMICAL AGENT DETECTOR EVALUATION	0	3000	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 2500 PCADE - Initiate government evaluation of candidate technologies.
- 500 PCADE - Initiate systems engineering support.

Total 3000

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	515	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 515 SBIR

Total 515

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	2131	10093	8137	8134	8143	8148	8164	Cont	Cont
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	1102	5913	5183	7151	21142	21254	22410	28576	Cont	Cont
JC1500 NBC RECON VEHICLE (NBCRV)	13139	10272	14991	10120	7559	0	0	0	0	56081
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	2085	0	5122	26357	26124	29961	31783	38924	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	14889	55581	3433	12757	12806	12771	12839	0	0	125076
MC0100 JT SVC LIGHT NBC RECON SYS (JSLNBCRS)	36988	50452	71311	60852	55610	56404	93144	108370	Cont	Cont
S02201 IMPROVED CHEMICAL AGENT MONITOR (ICAM)	0	4083	0	0	0	0	0	0	0	4083
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	2994	2721	17764	27000	29668	29086	37467	32306	Cont	Cont

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CA5**

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. Due to ship availability, the decommissioning effort may run into early FY06.
JBPDS	The Joint Biological Point Detection System (JBPDS) utilizes an open systems approach as part of the overall acquisition strategy to expedite fielding of a credible force protection strategy, while ensuring a process is in place to inserting maturing and validated technologies. 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 the testing to launch upgrades of 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.
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.

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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.
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. The program will build on the DARPA Smart Sensor, technology base, industry opportunities and JBPDS programs to maximize commonality across the biological detection family. Pre-milestone activities to reach Milestone A must be initiated in FY05. Concurrently, concept exploration and tech base activities will be monitored to import the necessary 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), issues were identified in meeting two key performance parameters. Testing was terminated and the development contract allowed to expire. The acquisition strategy is being restructured to meet the JCAD requirements. A new Acquisition Program Baseline and Single Acquisition Management Plan has been submitted by JPM NBC CA for approval. 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.

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JCBAWM

Increment 1: 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 2: This increment identifies a technology for detecting/monitoring Chemical Warfare Agents (CW agents) in water. Milestone A is planned for FY08.

Increment 3: This increment develops a technology to replace Increment 1 with a non-reagent biological detector/monitor in water.

Increment 4: This increment develops a detector/monitor for identifying radiological agents in water. Milestone A is planned for FY08.

Increment 5: This increment integrates all technologies into one detector/monitor for chemical, biological and radiological agents.

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JCSD

The JCSD program will develop and test platform specific prototype laser interrogation of surface agents system via a spiral development acquisition strategy. System development is under contract with ITT Industries, and will demonstrate a technology readiness level (TRL) of six in laboratory and field testing, and will be used in the upcoming FY05 Chemical Unmanned Ground Vehicle (CUGR) Advance Concept Technology Demonstration (ACTD). The Sole Source contract with ITT Industries will finalize the technical approach and produce three prototypes. The system algorithm and design will be optimized and later integrated onto the JSLNBCRS. Extensive laboratory and early user testing will be conducted in preparation for an Operational Test (OT) in FY06. Upon successful completion of OT, a Milestone C In-Process Review (IPR) will be held to initiate the formal Acquisition Program, and approve low-rate initial production of the JCSD. The JCSD will be introduced to the JSLNBCRS and Stryker Fleets via Pre-Planned Product Improvements in FY07.

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.

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DATE: **February 2005**

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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 to Northrop Grumman Mission Systems (NGMS) on 4 March 2004. Initial Operational Capability (IOC), HMMWV/LAV variant, is expected during FY07.

JSLSCAD

The Joint Program Executive Officer for Chemical & Biological Defense (JPEO-CBD) requested a restructure of the entire JSLSCAD program in September 2003. The JSLSCAD program restructure reflects an incremental acquisition strategy to provide initial capability using the current configuration and an evaluation of commercial systems against the JSLSCAD Joint Operational Requirements Document (JORD) requirements.

Increment 1 - Initial Capability: This Increment is the current JSLSCAD configuration developed under the Engineering and Manufacturing Development (EMD) contract with General Dynamics Armament and Technical Products (GDATP), Deland, FL (now Charlotte, NC). 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 1 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 1 systems will be used for ground mobile reconnaissance applications on the Stryker Nuclear, Biological and Chemical (NBC) Reconnaissance Variant and the Joint Service Light NBC Reconnaissance System.

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Increment 2 Commercial Item - Ground/Ship/Fixed-Site: Increment 2 will pursue an evaluation of three commercially available systems from three contractors who responded favorably to a market survey. The Government will procure and evaluate the commercial systems with the potential to meet the JSLSCAD KPPs for ground, mobile, fixed site, and shipboard applications. The Government anticipates one or more contractors will be awarded a low rate initial production (LRIP) contract as a result of its evaluation. Upon successful completion of LRIP and IOT&E, a full rate production contract will be awarded to meet the joint forces JSLSCAD ground vehicle/shipboard/fixed-site requirements. Increment 2 contractors are listed below-

a. General Dynamics Armament and Technical Products, Charlotte, NC
b. Northrop Grumman Security Systems Corporation, Linthicum, MD
c. Bruker Daltonics, Inc, Billerica, MA

Increment 3 Commercial Item - Aerial: After the Increment 2 Government evaluation, the Government will assess the potential for developing the contractor's item to meet the Increment 3 aerial requirements. If the Increment 2 system does not have the potential to meet the Increment 3 KPPs, the Government will conduct another market survey to determine if there is a commercial technology with the capability to meet the Increment 3 requirements.

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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.
MCAD	The program procured six MCADs in FY04 for Government test and evaluation as part of the JSLSCAD Increment 2 government evaluation. The MCAD instrument is one of three commercial items being evaluated against the JSLSCAD requirements. The results of the Government evaluation will be used to determine the best value for the JSLSCAD fixed site, ground mobile, and naval applications.
PCADE	PCADE is a limited technology demonstration program to investigate emerging technologies for potential insertion into future point chemical agent detection programs.

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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 - Detection and Identification Component Upgrades	C/CPFF	GD, ATP, Charlotte, NC	C	791	0	NONE	1100	2Q FY06	0	NONE	0	1891	0
SW SB - JBPDS Test Hardware (WSLAT)	C/CPFF	GD, ATP, Charlotte, NC	C	0	2727	2Q FY05	350	1Q FY06	0	NONE	0	3077	0
HW S - Sensor Design	PO	MIT-LL, Boston, MA	F	0	3500	2Q FY05	0	NONE	0	NONE	0	3500	0
HW S - Identification upgrades	SS/CPFF	Constellation Technology, Washington, DC	F	0	2550	3Q FY05	0	NONE	0	NONE	0	2550	0
JBSDS													
SW SB - Develop and Integrate JBSDS, Initiate LRIP, Develop ILS and Documentation	C/CPFF	Science & Engineering Services, Inc, Columbia, MD	C	6755	1200	1Q FY05	0	NONE	0	NONE	0	7955	0
SW SB - Initiate Demonstration of Increment II technologies	C/CPFF	TBS	C	0	4544	2Q FY05	0	NONE	0	NONE	0	4544	0
JBSDS II													
HW S - Finalize design, conduct Critical Design Review, develop logistic products, and fabricate prototypes	C/CPFF	TBS	C	0	0	NONE	11346	1Q FY06	24683	1Q FY07	0	36029	0
JCAD													
SW SB - Purchase Commercial Detectors	C/FFP	TBS	C	1200	0	NONE	2200	1Q FY06	0	NONE	0	3400	0

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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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
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	4802	2Q FY05	8791	2Q FY06	0	NONE	0	21393	0
HW S - Development/Design/Integration of LAV Variant	C/CPFF	Northrup Grumman Mission Systems, Sierra Vista, AZ	C	11491	3218	2Q FY05	0	NONE	0	NONE	0	14709	0
JSLSCAD													
SW S - Develop Software	C/CPFF	General Dynamics-ATP, Charlotte, NC	C	14975	250	2Q FY05	250	1Q FY06	0	NONE	0	15475	11095
SW S - Design and Build Test Hardware	C/CPFF	General Dynamics-ATP, Charlotte, NC	C	37500	250	2Q FY05	250	1Q FY06	0	NONE	0	38000	0
SW S - Develop and Manage Test Methodology	PO	Various	U	1000	1500	1Q FY05	500	1Q FY06	1000	1Q FY07	0	4000	0
SW S - Purchase and Support Commercial Systems	C/CPFF	Various	C	4122	4000	2Q FY05	1000	2Q FY06	2000	2Q FY07	0	11122	0
HW S - Purchase Data Collection Instrumentation	Reqn	TBS	C	0	0	NONE	900	1Q FY06	0	NONE	0	900	0
Subtotal I. Product Development:				85634	28541		26687		27683		0	168545	

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
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I. Product Development - Cont.

Remarks: JBPDS - Purchase five XM96 systems at $503k/ea and one system support package at $295k.

JBSDS II - FY07 - 18 engineering prototypes @ $1M each.

JCAD - FY06 - 120 systems at $13.5K per system

JSLSCAD - FY06 - Three systems at $387K each from vendor one; three systems at $300K each from vendor two; and three systems at $484K each from vendor three for a total of nine systems.

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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													
ILS S - Continued Support of Fielded IBAD Systems, and decommission of IBADS.	MIPR	NSWC, Dahlgren, VA	U	263	289	1Q FY05	0	NONE	0	NONE	0	552	0
JBSDS													
TD/D SB - Modeling and Simulation	PO	FT Detrick, MD and BSM Inc., Kennett Square, PA	C	200	200	1Q FY05	0	NONE	0	NONE	0	400	0
TD/D S - Modeling and Test Support	MIPR	NAVSEA/Johns Hopkins University, Baltimore, MD	F	600	1400	1Q FY05	0	NONE	0	NONE	0	2000	0
ES S - Modeling & Simulation, CAIV	MIPR	Various	F	0	300	1Q FY05	0	NONE	0	NONE	0	300	0
JBSDS II													
ES S - Modeling & Simulation, test support	PO	BSM, Inc, Kennett Square, PA	C	0	0	NONE	240	1Q FY06	240	1Q FY07	0	480	0
ES S - Modeling & Simulation, test support	PO	NAVSEA, Johns Hopkins-APL, Columbia, MD	C	0	0	NONE	650	1Q FY06	670	1Q FY07	0	1320	0
JCAD													
ILS S - Technical Data and Logistics Support	MIPR	Various	U	2558	0	NONE	2386	1Q FY06	0	NONE	0	4944	0
ES S - Contractor Support - Technical Evaluation	Reqn	TBS	C	0	0	NONE	2345	1Q FY06	0	NONE	0	2345	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
ES S - Evaluate commercial detectors	MIPR	Various	U	0	0	NONE	1415	1Q FY06	0	NONE	0	1415	0
JCBAWM													
ILS S - Logistics Support	MIPR	RDECOM, APG, MD	U	0	0	NONE	150	1Q FY06	150	1Q FY07	0	300	0
TD/D S - Technical Data Documentation	MIPR	RDECOM, APG, MD	U	0	0	NONE	100	1Q FY06	100	1Q FY07	0	200	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	1200	1Q FY06	0	NONE	0	1200	0
PCADE													
ES S - Engineering Support	MIPR	Various	U	0	350	2Q FY05	0	NONE	0	NONE	0	350	0
Subtotal II. Support Costs:				8851	2929		9226		2110		0	23116	

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
JBPDS													
DTE C - WSLAT Test Execution	MIPR	Various	U	0	0	NONE	300	4Q FY06	0	NONE	0	300	0
DTE C - Collector and Embedded Trainer Development	PO	Various	U	0	0	NONE	800	2Q FY06	0	NONE	0	800	0
OTHT SB - T&E Capability	PO	Various	U	0	0	NONE	1890	2Q FY06	1017	1Q FY07	0	2907	0
HW S - Instrumentation and control systems	MIPR	Various	U	0	0	NONE	2192	3Q FY06	0	NONE	0	2192	0
JBSDS													
OTE S - Planning and Operational Testing I	MIPR	AFOTEC, Albuquereque, NM	U	818	620	2Q FY05	0	NONE	0	NONE	0	1438	0
DTE S - Production Verification Test	MIPR	Developmental Test Command, APG, MD	U	100	1000	1Q FY05	0	NONE	0	NONE	0	1100	0
OTE S - Operational Testing (MOT&E)	MIPR	Operational Test Command, FT Hood, TX	U	700	3200	2Q FY05	0	NONE	0	NONE	0	3900	0
OTE S - DT/OT Evaluation	MIPR	AEC, APG, MD	U	450	620	2Q FY05	0	NONE	0	NONE	0	1070	0
OTHT SB - Initiate demonstration of Increment 2 technologies	MIPR	DTE, DPG, UT	U	0	1328	2Q FY05	0	NONE	0	NONE	0	1328	0
OTHT S - Test & Evaluation Infrastructure	PO	Various	U	0	0	NONE	0	NONE	2034	2Q FY07	0	2034	0
JBSDS II													
OTHT S - Initiate developmental and operational test planning and developmental testing	MIPR	DTC, APG MD	U	0	0	NONE	613	1Q FY06	2110	1Q FY07	0	2723	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
DTE S - Developmental/Operational Evaluation	MIPR	Various	U	0	0	NONE	800	1Q FY06	1200	1Q FY07	0	2000	0
OTE S - Opetational Test and Evaluation	MIPR	OTC, Fort Hood, TX	U	0	0	NONE	200	1Q FY06	400	1Q FY07	0	600	0
OTHT SB - Agent Simulant Correlation	MIPR	TBS, JPM NBC	U	0	0	NONE	2700	1Q FY06	2000	1Q FY07	0	4700	0
OTHT S - CB Standoff Chamber Test Capabillity	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	2000	1Q FY07	0	2000	0
OTHT S - Field Simulant Challenge Test and Cloud Characterization	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	2000	1Q FY07	0	2000	0
OTHT S - Additional Test Grid Development	MIPR	TBS, JPM NBC	U	0	0	NONE	0	NONE	2000	1Q FY07	0	2000	0
OTHT S - Turnkey packages	MIPR	Various	U	0	0	NONE	0	NONE	2000	3Q FY07	0	2000	0
JCAD													
OTHT S - Evaluate Commercial Detectors (Increment 1)	MIPR	Various	U	5700	0	NONE	5340	1Q FY06	0	NONE	0	11040	0
OTHT S - Evaluate Commercial Detectors (Increment 2)	MIPR	Various	U	0	0	NONE	0	NONE	3560	1Q FY07	0	3560	0
OTHT SB - Agent simulant dissemination systems	MIPR	Various	U	0	0	NONE	2500	3Q FY06	0	NONE	0	2500	0
JCBAWM													
DTE S - Developmental/Operational Testing	MIPR	TBS	U	0	0	NONE	3450	2Q FY06	6930	2Q FY07	0	10380	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
JSLNBCRS													
OTHT SB - Conduct FAT/PVT of HMMWV	MIPR	Various	U	3200	2350	2Q FY05	0	NONE	0	NONE	0	5550	0
DTE S - LAV DT I	MIPR	Dugway Proving Ground, Dugway, UT	U	50	2340	2Q FY05	0	NONE	0	NONE	0	2390	0
OTHT S - MOTE Test Planning & Prep	PO	Various	U	4147	2117	1Q FY05	0	NONE	0	NONE	0	6264	0
JSLSCAD													
OTE S - Multiservice Operational Test and Evaluation (Increment 2)	MIPR	Various	U	14363	0	NONE	5538	1Q FY06	6445	1Q FY07	0	26346	3464
OTE S - Remote Vapor Sensing to Support NRC Findings (M&S)	PO	Various	U	2206	3000	1Q FY05	3600	1Q FY06	4500	1Q FY07	0	13306	0
OTE S - Evaluate Commercial Remote Sensing Systems (Increments 2 and 3)	PO	Various	U	0	7209	2Q FY05	11638	2Q FY06	6732	2Q FY07	0	25579	0
OTE S - Evaluate Background Data	PO	Various	U	0	0	NONE	7900	1Q FY06	2000	1Q FY07	0	9900	0
PCADE													
OTHT S - Evaluate Candidate Technologies	MIPR	Various	U	0	2500	2Q FY05	0	NONE	0	NONE	0	2500	0
Subtotal III. Test and Evaluation:				31734	26284		49461		46928		0	154407	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 NBC CA, APG, MD	U	500	83	1Q FY05	814	2Q FY06	0	NONE	0	1397	0
JBSDS													
PM/MS S - Program Management/Management Support	MIPR	JPM NBC CA, APG, MD	U	2081	2000	1Q FY05	0	NONE	0	NONE	0	4081	0
PM/MS S - Other Services (Army, Navy, and Air Force)	MIPR	Various	U	984	1224	1Q FY05	0	NONE	0	NONE	0	2208	0
PM/MS S - Modeling and simulation analysis, market research and CAIV	MIPR	Various	U	1480	400	1Q FY05	0	NONE	0	NONE	0	1880	0
JBSDS II													
PM/MS S - PM NBC CA, APG, MD	MIPR	PM NBC CA, APG, MD	U	0	0	NONE	2000	1Q FY06	2000	1Q FY07	0	4000	0
PM/MS S - PM/MS other services (USN, USMC, USAF)	MIPR	Various	U	0	0	NONE	1100	1Q FY06	1224	1Q FY07	0	2324	0
PM/MS S - Modeling and Simulation Analysis	MIPR	Various	U	0	0	NONE	400	1Q FY06	400	1Q FY07	0	800	0
JCAD													
PM/MS SB - Joint Service Support	MIPR	Various	U	8293	0	NONE	1377	1Q FY06	0	NONE	0	9670	0
JCBAWM													
PM/MS S - Joint Service Support	MIPR	TBS	U	0	0	NONE	360	1Q FY06	550	1Q FY07	0	910	0
JSLNBCRS													
PM/MS SB - Project/Program Management	MIPR	JPM NBC CA, APG, MD	U	2050	760	1Q FY05	760	1Q FY06	0	NONE	0	3570	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CA5**

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSLSCAD													
PM/MS S - Management and Systems Engineering Support	MIPR	JPM NBC CA, APG, MD	U	6008	1200	1Q FY05	1200	1Q FY06	1200	1Q FY07	0	9608	2580
PM/MS S - Joint Service Support	MIPR	Various	U	0	1700	1Q FY05	1700	1Q 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	515	NONE	0	NONE	0	NONE	0	515	0
Subtotal IV. Management Services:				21396	8032		9711		7074		0	46213	

Remarks:

TOTAL PROJECT COST:	147615	65786		95085		83795		0	392281	

Exhibit R-4a, Schedule Profile

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT: CA5

D. Schedule Profile:

	FY 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																													
Block I First Unit Equipped (FUE)	1Q																															
Whole System Live Agent Test													1Q		2Q																	
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	—	1Q																											
Increment I JBSDS Engineering Design Test					1Q																											
Increment I JBSDS LRIP (4 Systems)					2Q	—	—	4Q																								
Increment I JBSDS Milestone C2					2Q																											
Increment I JBSDS Multi-Service Operational Test & Evaluation (MOT&E)					2Q	—	—	—	1Q																							
Increment I JBSDS Full Rate Production Decision								4Q	—	—	—	—	—	—	—	2Q																

Exhibit R-4a, Schedule Profile

DATE: February 2005

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
JBSDS (Cont)																																
Increment I JBSDS First Unit Equipped (FUE)										2Q																						
JBSDS II																																
Increment II JBSDS Milestone B									1Q																							
Increment II JBSDS System Development and Demonstration (SDD)										2Q	—	—	—	—	—	—	—	2Q														
Increment II JBSDS Developmental Testing (DT)														3Q	—	—	—	2Q														
Increment II JBSDS CDR														3Q																		
Increment II JBSDS Early Operational Assessment																	1Q	2Q														
Increment II JBSDS Milestone C																			3Q													
Increment II JBSDS Low Rate Initial Production (LRIP)																			3Q	—	—	3Q										
Increment II JBSDS Full Rate Production (FRP)																									2Q	—	—	—	—	—	—	4Q
JCAD																																
Market Survey of Commercially Available Items			3Q																													

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JCAD (Cont)																																
Request For Proposal (RFP) to Selected Commercially Available Systems			3Q																													
Technical Evaluation and Analysis of Data				4Q	—	—	—	—	2Q																							
Milestone C - Low Rate Initial Production (LRIP) Decision											3Q																					
Multi-service Operational Test and Evaluation (MOT&E)												4Q																				
Full Rate Production (FRP) Decision													1Q																			
JCBAWM																																
Initiate test and evaluation efforts							3Q	—	—	—	—	4Q																				
Initiate/Complete operational/development testing													1Q	—	—	4Q																
Milestone A Increment 2/4																				4Q												
Milestone C Increment 1																				4Q												
Milestone B Increment 2/4																												4Q				
JCSD																																
Technology Development	>>	—	—	4Q																												
JEM																																

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JEM (Cont)																																
BLK I - Software Development	>>	—	—	—	—	—	—	3Q																								
BLK I - Milestone B Decision		2Q																														
BLK I - Award System Development and Demonstration (SDD) Contract		2Q																														
BLK I - In Process Review (IPR)				4Q																												
BLK I - Developmental Testing (DT) (Contractor)					1Q	—	—	3Q																								
BLK I - DT (Government)						2Q	—	4Q																								
BLK I - Software Maintenance				4Q	—	—	—	—	1Q																							
BLK I - Establish, Train, Stand Up Software Support Activity							3Q	—	—	—	3Q																					
BLK I - Operational Testing (OT)								4Q	1Q																							
BLK I - Milestone C (Limited Deployment) and Full Rate Production (FRP)										2Q																						
BLK I - Production and Deployment										2Q	—	—	—	—	—	—	—	2Q														
BLK I - Initial Operational Capability (IOC)												4Q																				
JSLNBCRS																																

Exhibit R-4a, Schedule Profile

DATE: February 2005

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
JSLNBCRS (Cont)																																
Chemical Test CBMS Block II	1Q																															
Development and Testing				4Q	—	—	—	4Q																								
Milestone C Low Rate Initial Production (LRIP)		2Q																														
Engineering Developmental Test (EDT) II LAV Variant				4Q																												
HMMWV FAT						2Q	3Q																									
Developmental Test I (DT I) LAV variant						2Q	3Q																									
Developmental Testing CBMS II						2Q	—	—	—	4Q																						
HMMWV & LAV PVT							3Q	4Q																								
First Article Test LRIP (FAT) LRIP HMMWVs							3Q	4Q																								
Multi-service Operational Test and Evaluation (MOT&E) for HMMWV and the LAV										3Q																						
Milestone C Full Rate Production (FRP)												4Q																				
JSLSCAD																																
Complete Test and Operational Documentation for Stryker NBCRV Test	1Q	2Q																														

Exhibit R-4a, Schedule Profile

DATE: February 2005

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
JSLSCAD (Cont)																																
Support Stryker NBCRV Pre Qualification Test (PQT) Testing	>>	—		4Q																												
Joint Service Milestone C Low Rate Initial Production (LRIP)											3Q																					
Increment 2 - Evaluation of Commercial Systems						2Q	—	—			3Q																					
Increment 2 - Initial Operational Test and Evaluation (IOT&E) of Commercial Systems																4Q	1Q															
Increment 2 - Full Rate Production Decision																			3Q												
JWARN																																
JWARN BLK II - System Design and Development (SDD) Performance	>>	—	—	—	—	—	—	—	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 - Low Rate Initial Production (LRIP) Contract Award															3Q	—	1Q															
JWARN BLK II - First Article Test															3Q	4Q																

Exhibit R-4a, Schedule Profile

DATE: February 2005

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
JWARN (Cont)								
JWARN BLK II - Initial Operational Test and Evaluation (IOT&E)					1Q 2Q			
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	
MCAD								
Initiate Agent and Interference Testing	>> ——— 3Q							
Environmental Trials	1Q							
EMI Testing at WSMR	1Q 2Q							
TIC Testing at NTS	4Q							
Procure Six Commercial MCADs	2Q							
NBCRV								
Production Qualification Test (PQT)	>> ——— 4Q							
NBCRV IPR - LRIP	4Q							

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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):

PCADE	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
Evaluate Candidate Detection Technologies/Systems					2Q	—		4Q																								

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CM5**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	945	17761	395	0	0	0	0	0	0	19101

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 (185 CONUS and 15 OCONUS).

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.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

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 2004	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	945	17591	395	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 331 WMD CST- Continued development of Unified Command Suite (UCS) Increment I.
- 614 WMD CST- Provided government engineering and planning support to Analytical Laboratory System (ALS) Block I.

Total 945

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CM5**

FY 2005 Planned Program:

- 6471 WMD CST- Develop ALS Block I Prototypes.
- 1395 WMD CST- Develop UCS Increment I Prototypes.
- 1714 WMD CST- Initiate Production Qualification Test (PQT) for ALS Block I.
- 1112 WMD CST- Initiate Developmental Testing (DT) for UCS Increment I.
- 1205 WMD CST- Initiate Operational Assessment (OA) for ALS Block I.
- 1249 WMD CST- Initiate Operational Assessment (OA) for UCS Increment I.
- 670 WMD CST- Government Engineering and Management Support.
- 3775 WMD-CST- Complete Component Testing of analytical detection equipment being considered for the ALS Block I.

Total 17591

FY 2006 Planned Program:

- 295 WMD CST- Complete Operational Assessment of the UCS Increment I and ALS Blk I upgrades.
- 100 WMD CST - Provide government engineering and planning support.

Total 395

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	170	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CM5**

FY 2005 Planned Program:

- 170 SBIR

Total 170

C. Other Program Funding Summary:

	FY 2004	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)	1525	1352	1557	1558	0	0	0	0	0	5992
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	8792	18200	0	0	0	0	0	0	0	26992
JS0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	0	13300	54252	9082	0	0	0	0	0	76634
JS0500 CB INSTALLATION FORCE PROTECTION PROGRAM	0	91230	143793	184981	203957	217646	152347	148234	Cont	Cont

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CM5**

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 Block I:
The ALS Block 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).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CM5**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	1395	1Q FY05	0	NONE	0	NONE	0	1726	0
SW SB - ALS Blk I - Chassis and Shelter Prototype	C/FFP	Wolfcoach, Auburn, MA	C	0	991	3Q FY05	0	NONE	0	NONE	0	991	0
SW SB - ALS Blk I - Analytical Detection Equipment Prototypes	C/FFP	TBS	C	0	1800	3Q FY05	0	NONE	0	NONE	0	1800	0
HW S - ALS Blk I - Prototype Integration Contract	C/FFP	TBS	C	0	3680	3Q FY05	0	NONE	0	NONE	0	3680	0
Subtotal I. Product Development:				331	7866		0		0		0	8197	

Remarks:

II. Support Costs: Not applicable

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CM5**

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 Grounds, Aberdeen, MD	U	0	1714	4Q FY05	0	NONE	0	NONE	0	1714	0
DTE S - UCS Increment I - Developmental Testing	MIPR	Aberdeen Proving Grounds, Aberdeen, MD	U	0	1112	2Q FY05	0	NONE	0	NONE	0	1112	0
OTE S - ALS Blk I - Operational Assessment	MIPR	Aberdeen Proving Grounds, Aberdeen, MD	U	0	1205	4Q FY05	147	2Q FY06	0	NONE	0	1352	0
OTE S - UCS Increment I - Operational Assessment	MIPR	Aberdeen Proving Grounds, Aberdeen, MD	U	0	1249	4Q FY05	148	1Q FY06	0	NONE	0	1397	0
OTHT C - ALS Blk I - Analytical Detection Equipment Testing	C/FFP	TBS	C	0	3775	3Q FY05	0	NONE	0	NONE	0	3775	0
Subtotal III. Test and Evaluation:				0	9055		295		0		0	9350	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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	670	2Q FY05	100	2Q FY06	0	NONE	0	1384	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	170	NONE	0	NONE	0	NONE	0	170	0
Subtotal IV. Management Services:				614	840		100		0		0	1554	

Remarks:

TOTAL PROJECT COST:	945	17761		395		0		0	19101	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 BLK I PROGRAM	>>															4Q																
Block I - Technology Screening	>>				1Q																											
Block I - IPR - Stakeholder					1Q																											
Block I - IPR - MDA						2Q																										
Block I - Component Testing			3Q				3Q																									
Block I - Final Component Down-select			3Q				3Q																									
Block I - System Prototyping						2Q	3Q																									
Block I - Production Qualification Test (PQT)								4Q		2Q																						
Block I - Operational Assessment (OA)								4Q		2Q																						
Block I - Milestone C - Full Rate Production										2Q																						
UCS INCREMENT I PROGRAM	1Q															2Q																
Incr I - CPD Approval					1Q																											
Incr I - Design Engineering and Documentation						2Q																										
Incr I - Prototyping-Vehicle Installation						2Q																										
Incr I - Developmental Testing (DT)						2Q		4Q																								

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 (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)																																
Incr I - Operational Assessment (OA)								4Q	2Q																							
Incr I - IPR									2Q																							
Incr I - Production									2Q				2Q																			

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	2833	2534	671	11697	21738	27992	20371	19225	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.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

JECP - Results of a Baseline Capability Assessment conducted by the Joint Requirements Office identified expeditionary CP as the highest priority capability gap within CP. 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 2004	FY 2005	FY 2006	FY 2007
JOINT COLLECTIVE PROTECTION EQUIPMENT	2833	2513	671	1526
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 287 JCPE - Completed development and testing of a Collectively Protected Expeditionary Latrine (CPEL) for the Collectively Protected Expeditionary Medical System (CPEMEDS). Completed development and testing of a modified M28 liner for Large Capacity Shelters (LCS). Continued 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 testing of improved airlock doors systems to increase durability and life cycle costs for all existing CB shelter systems utilizing the Bump Through Door Airlocks.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CO5**

FY 2004 Accomplishments (Cont):

- 1495 JCPE - Completed design and testing of improvements to liner material, construction, and enclosures. Continued live agent testing of improved 100/200 cubic feet per minute (CFM) gas filters. Continued integration and testing of a Tunnel Airlock Litter Patient (TALP) with a Modular General Purpose Tent System (MGPTS). Continued program management and Integrated Product Team (IPT) support.
- 1051 JCPE - Completed a study to determine if CB shelters should be tested for extreme environmental conditions. Completed identification and testing of a second source for individual distribution breathing air hose. Completed development and testing of a filter moisture indicator. Completed development of shipboard CP automation. Initiated development and testing of a Small Shelter System (SSS) Contamination Control Area (CCA) and airlock integration. Initiated development and testing of collective protection system operational blast mitigation techniques. 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 development and testing of a redesigned CPEMEDS collective protection liner systems for use in the Chemically Protected Deployable Medical Systems (CPDEPMEDS) version of the SSS.

Total 2833

FY 2005 Planned Program:

- 1536 JCPE - Complete development and testing of reliability improvements of FFA-400 and M28 blowers. Complete live agent testing of improved 100/200 CFM gas filters. Complete integration and testing of a TALP with a MGPTS. Complete development and testing of a SSS CCA/airlock integration. Continue development and testing of collective protection system blast operational mitigation techniques.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**CO5**

FY 2005 Planned Program (Cont):

- 977 JCPE - Continue 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. Complete testing of 100/200 CFM gas filters with new media to provide protection against selected Toxic Industrial Chemicals (TICs). Continue program management and IPT support.

Total 2513

FY 2006 Planned Program:

- 671 JCPE - Complete 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. Complete development and testing of collective protection system, operational blast mitigation techniques. Continue program management and IPT support.

Total 671

FY 2007 Planned Program:

- 976 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 and IPT support.
- 550 JCPE - Initiate a 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 1526

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

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT: CO5

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT EXPEDITIONARY COLLECTIVE PROTECTION	0	0	0	10171
RDT&E Articles (Quantity)	0	0	0	0

FY 2007 Planned Program:

- 1498 JECP - Update the Single Acquisition Management Plan (SAMP). Provide 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.
- 5478 JECP - Continue contract for prototype development and test 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 the CPD and 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.
- 1171 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.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

FY 2007 Planned Program (Cont):

- 2024 JECP - Through the Product Support 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 10171

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	21	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 21 SBIR

Total 21

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
JCP001 COLLECTIVELY PROTECTED DEPLOYABLE MEDICAL SYSTEM	0	0	0	0	0	0	0	0	0	0
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	15892	16088	10517	8707	3592	5140	0	0	0	59936
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	11825	2166	0	0	0	0	0	0	0	13991
JP1111 JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)	0	0	0	0	0	4995	6210	8110	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	19892	14250	16460	30149	30599	31531	32621	33295	Cont	Cont

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**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.

JECP

Pursue an incremental development strategy based on the JRO/User developed capability documents. Conduct a tailored AoA leveraging the market survey, test results, and lessons learned from the FY05 Collective Protection Technology Readiness Evaluation (ColPro TRE). Following MS B, use a Statement of Objectives (SOO) and P-Spec to award competitive cost plus incentive type contract(s) to develop prototypes for Developmental Testing (DT) and EOA. Conduct an Operational Assessment (OA) prior to MS C. Following MS C, exercise contract option for Low Rate Initial Production (LRIP) to support DT and Initial Operational Test and Evaluation (IOT&E). After a successful full rate production decision, award a competitive fixed price production contract with multi-year options and product improvement incentives.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 - 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													
HW S - Prototype Development	C/CPIF	TBS	U	0	0	NONE	0	NONE	3300	1Q FY07	0	3300	0
Subtotal I. Product Development:				0	0		0		3750		0	3750	

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
JECP													
TD/D S - MS C Documentation	MIPR	Various	U	0	0	NONE	0	NONE	2024	1Q FY07	0	2024	0
Subtotal II. Support Costs:				0	0		0		2024		0	2024	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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													
OTHT C - Shipboard CPS Supply Fans	WR	NSWCDD, Dahlgren, VA	U	180	150	1Q FY05	50	1Q FY06	0	NONE	0	380	200
OTHT C - 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 C - SSS CCA/Airlock	MIPR	HSW/YACN Brooks City Base, San Antonio, TX	U	0	225	1Q FY05	0	NONE	0	NONE	0	225	250
DTE S - CP Protection Blast Operational Analysis	MIPR	HSW/YACN Brooks City Base, San Antonio, TX	U	80	288	1Q FY05	75	1Q FY06	0	NONE	0	443	0
OTHT C - Modified 100/200 CFM Filter for TICs - Testing	MIPR	ECBC, Edgewood, MD	U	0	450	1Q FY05	0	NONE	0	NONE	0	450	0
OTHT C - Land-based Filter Surveillance Testing	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	300	1Q FY07	300	600	0
DTE C - Blower Reliability and Environmental Testing	MIPR	ECBC, Edgewood, MD	U	0	72	1Q FY05	0	NONE	0	NONE	0	72	0
JECP													
DTE S - Prototype Testing	MIPR	TBS	C	0	0	NONE	0	NONE	2178	1Q FY07	0	2178	0
DTE S - Test Results & Resource Data Base	MIPR	TBS	U	0	0	NONE	0	NONE	1171	1Q FY07	0	1171	0
Subtotal III. Test and Evaluation:				1317	1845		125		3649		300	7236	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	200	1Q FY05	200	1Q FY06	200	1Q FY07	0	1356	820
PM/MS S - Overall Program Management & IPT Oversight	MIPR	NSWCDD, Dahlgren, VA	U	1457	468	1Q FY05	346	1Q FY06	576	1Q FY07	0	2847	1403
JECP													
PM/MS S - PMO & IPT	MIPR	Dahlgren, VA	U	0	0	NONE	0	NONE	1498	1Q FY07	0	1498	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	21	NONE	0	NONE	0	NONE	0	21	0
Subtotal IV. Management Services:				2213	689		546		2274		0	5722	

Remarks:

TOTAL PROJECT COST:	3530	2534		671		11697		300	18732	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **CO5**

D. Schedule Profile:

	FY 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																																
Market Survey and Test Latrine CPEMEDS	>>					2Q																										
Develop Modified M28 Liner-Lg Cap Shelters	>>					2Q																										
Blower Reliability and Environmental Testing					1Q	2Q																										
Develop and Test Improved Ship CPS Motors	>>											4Q																				
Develop Improved Airlock	>>					2Q																										
Develop Improved Liner-Mat/Constr/Closures	>>							4Q																								
Agent Testing 100/200 CFM Gas Filters	>>							4Q																								
Develop and Test TALP for MGPTS	>>							4Q																								
CB Shelter Extreme Environments Study	1Q			4Q																												
Individual Breathing Air Hose Improvements	1Q			4Q																												
Develop and Test Filter Moisture Indicator	1Q			4Q																												
Develop and Test Ship CP Automation	1Q			4Q																												
Develop and Test SSS CCA/Airlock	1Q					2Q																										

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JCPE (Cont)																																
Develop and Test CP Blast Operations Analysis	1Q	—	—	—	—	—	—	—	—	—	—	4Q																				
Patriot Missile CP Upgrade Recommendations	1Q	—	—	—	—	—	—	4Q																								
Modify CPEMEDS Liner for CPDEPMEDS SSS	1Q	—	—	—	2Q																											
Develop and Test 100/200 CFM Gas Filters-TICs					1Q	—	—	4Q																								
28VDC M93 Gas Particulate Filter Unit													1Q	—	—	4Q																
Land-based Aged Filter Capacity													1Q	—	—	—	—	—	—	4Q												
Base X Liner													1Q	—	—	—	—	—	—	4Q												
JECP																																
Complete CDD									2Q																							
MS-B Decision											3Q																					
Prototype Contract Award											3Q																					
Prototype Development and DT											3Q	—	—	—	—	—	—	—	2Q													
CPD													2Q																			
EOA Testing																4Q																

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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)																																
OA																	1Q	—		3Q												
MS-C Decision																				3Q												
LRIP																				3Q	—			3Q								
IOT&E																				4Q	—			4Q								

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	5260	4264	19242	10638	5467	14885	15279	7521	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 Sensitive Equipment Decontamination (JSSED), Joint Service Family of Decontamination System (JSFDS), Joint Portable Decontamination System (JPDS), Joint Service Stationary Decontamination System (JSSDS), Joint Service Transportable Decontamination System - Small Scale (JSTDS-SM), Joint Service Transportable Decontamination System - Large Scale (JSTDS-LG), and the Joint Service Personnel/Skin Decontamination System (JSPDS).

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.

The JSFDS will provide a family of decontamination systems to decontaminate Chemical, Biological, Radiological and Nuclear (CBRN) warfare agents, and Toxic Industrial Materials (TIMs) from Service assets. In FY04, the capabilities to be met by the JSFDS programs were separated into JPDS, JSSDS, JSTDS-SM, JSTDS-LG and the JSPDS programs.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**DE5**

The JPDS will provide a decontamination system that is capable of being carried and operated by a single individual. It will support immediate thorough decontamination of a broad range of equipment, critical airfield assets and ships (e.g., flight, hanger, well decks, non-sensitive internal compartments) that have been exposed to chemical and biological warfare agents and TIMs.

The JSSDS will provide an automated thorough decontamination capability for large aircraft that have been exposed to CBRN agents and TIMs. The system will be used at established bases.

The JSTDS - SM will be transportable by a platform [i.e., High Mobility Multi-purpose Wheeled Vehicle (HMMWV)/Trailer, Family of Medium Tactical Vehicles (FMTV)/Trailer] capable of being operated in close proximity to combat operations off-road over any terrain. It is designed to have limited capability to keep it mobile. It 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 TIMs.

The JSTDS - LG can be transported on a platform that normally operates on roads and hard surfaces, with only a limited off-road capability. It will be capable of decontamination on-the-move and will have on-board decontaminant storage inherent to the system. It will be semi-autonomous (it will not require a warfighter to manually dispense decontaminant from an applicator). It will be used to decontaminate non-sensitive military materiel (including large aircraft), terrain, fixed facilities, airfields, naval ships, key command and control facilities, and property.

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

DATE: February 2005

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 2004	FY 2005	FY 2006	FY 2007
JS FAMILY OF DECON SYSTEMS (JSFDS)	5260	4229	0	0
RDT&E Articles (Quantity)	400	0	0	0

FY 2004 Accomplishments:

- 2138 JSFDS/JSPDS - Continued development testing (DT II) to include clinical studies to address long-term safety and initial packaging tests.
- 322 JSFDS/JSPDS - Initiated economic analyses of alternative logistics strategies for JSPDS, developed technical manual, training and other logistics support documentation.
- 1800 JSFDS/JSTDS-SM - Procured test units and decontaminants for down-selection testing (400 systems at average cost of $40K each) for the JSTDS-SM.
- 1000 JSFDS/JSTDS-SM - Conducted source selection, prepared test sites for conduct of down-select testing.

Total 5260

FY 2005 Planned Program:

- 1895 JSFDS/JSPDS - Complete DT II, including extended packaging testing, material compatibility testing, system level compatibility testing, and field durability developmental testing.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

FY 2005 Planned Program (Cont):

- 500 JSFDS/JSPDS - Conduct Performance Based Logistics (PBL) Business Case Analysis (BCA) to determine optimum logistics support strategy. Update logistics and training documentation based on test results.
- 842 JSFDS/JSTDS-SM - Perform an operational assessment on four candidate JSTDS-SM decontamination systems.
- 992 JSFDS - Congressional Add. Prepare and conduct study of passive materials for chemical and biological decontamination.

Total 4229

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT SERVICE PERSONNEL/SKIN DECONTAMINATION SYSTEM	0	0	2509	1485
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 1937 JSPDS - Conduct Initial Operational Test and Evaluation (IOT&E) to support full rate production decision.
- 572 JSPDS - Update program documentation to support MS C full rate production decision, update logistics support documentation including fielding plans, begin implementation of the support strategy identified by the PBL BCA.

Total 2509

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

FY 2007 Planned Program:

- 1285 JSPDS - Complete program documentation updates and obtain MS C full rate production decision. Transition to support strategy identified by the PBL BCA.
- 200 JSPDS - Perform shelf-life extension testing on decontaminants.

Total 1485

	FY 2004	FY 2005	FY 2006	FY 2007
JS SENSITIVE EQUIP DECON	0	0	1523	1271
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 1523 JSSED - Award SDD contract and initiate prototype award.

Total 1523

FY 2007 Planned Program:

- 1271 JSSED - Conduct developmental testing.

Total 1271

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT SERVICE TRANSPORTABLE DECONTAMINATION SYSTEM - SMA	0	0	15210	7882
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 5300 JSTDS-SM - Conduct Initial Operational Test and Evaluation (IOT&E) to support full rate production decision.
- 3400 JSTDS-SM - 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-SM - Update program documentation and obtain full rate Production decision. Conduct Performance Based Logistics (PBL) Business Case Analysis (BCA) to determine optimum logistics support strategy for the JSTDS-SM hardware and decontaminant(s). Update logistics and training documentation based on test results. Prepare fielding plans.
- 1400 JSTDS-SM - Procure decontaminants (40,000 gallons) and interim contract support for testing.
- 3310 JSTDS-SM - Develop change packages for detectors to ensure ability to assess success of decontamination operations.

Total 15210

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

FY 2007 Planned Program:

- 1550 JSTDS-SM - Perform extended live agent, toxic industrial material and material compatibility testing on the JSTDS-SM decontaminant to determine if objective capabilities can be met with existing decontaminant.
- 2500 JSTDS-SM - Develop and incorporate changes into JSTDS-SM (three systems) to improve reliability/decrease weight and validate reliability increases in JSTDS-SM through Field Durability Demonstration Testing.
- 3000 JSTDS-SM - Complete validation of detector modifications and test decontaminant with legacy decontamination of dual use systems.
- 832 JSTDS-SM - Update program, logistics and training documentation to reflect configuration changes, and test results. Prepare plans to modify fielded systems, as required.

Total 7882

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	35	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 35 SBIR

Total 35

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

C. Other Program Funding Summary:

	FY 2004	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	0	10047	12589	14233	16314	17192	Cont	Cont
JD0056 JS TRANSPORTABLE DECON SYSTEM - SMALL SCALE (JSTDS-SM)	0	0	2950	7106	11178	17195	39350	62130	Cont	Cont
JD0061 JOINT SERVICE SENSITIVE EQUIPMENT DECON (JSSED)	0	0	0	0	0	6759	6886	6487	Cont	Cont
JD5555 JOINT SERVICE MAN PORTABLE DECONTAMINATION SYSTEM (JSMPDS)	0	0	0	0	0	0	1479	3990	Cont	Cont
JD8000 DECONTAMINATION APPLICATION SYSTEMS	6000	0	0	0	0	0	0	0	0	6000
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)	6194	6401	0	0	0	0	0	0	0	12595
JN0018 SORBENT DECON	1253	0	0	0	0	0	0	0	0	1253
JX0054 DECONTAMINATION (DE) ITEMS LESS THAN $5M	7991	4839	0	0	0	0	0	0	0	12830

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**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)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

The JPID program will execute using an evolutionary acquisition strategy with technical insertions on an incremental approach. The first increment phase will use COTS and NDI. This approach will meet the warfighter initial requirements resulting in an increase in their operational tempo. The second increment will enhance the initial capability through product improvements and technical insertions. The third increment for decontamination on-the-move will require a comprehensive review of delivery systems using the evolutionary approach.

JSTDS LG — The JSTDS Large-Scale program is implementing an evolutionary acquisition strategy using incremental and spiral development. Increment I will focus largely upon fielding COTS/NDI hardware systems that improve upon the capability of the M12A1.

JSTDS SM — 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 2005**

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 prototype	C/CPFF	TBD	C	0	0	NONE	1000	1Q FY06	0	NONE	0	1000	0
JSTDS SM													
HW C - JSTDS-SM - Procure decontaminant	C/FFP	TBS	C	0	0	NONE	1060	1Q FY06	0	NONE	0	1060	0
HW S - JSTDS-SM - Modify detectors	MIPR	Various	U	0	0	NONE	0	NONE	2400	1Q FY07	0	2400	0
HW S - JSTDS-SM - Modify system	C/FFP	TBS	C	0	0	NONE	0	NONE	432	1Q FY07	0	432	0
Subtotal I. Product Development:				0	0		2060		2832		0	4892	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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	TBD	C	0	992	3Q FY05	0	NONE	0	NONE	0	992	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 SM													
ILS S - JSTDS-SM Logistics studies	MIPR	Various	U	0	0	NONE	575	1Q FY06	0	NONE	0	575	0
ILS S - JSTDS-SM Logistics studies	C/CPFF	Various	C	0	0	NONE	575	1Q FY06	0	NONE	0	575	0
ES SB - JSTDS-SM - Detector upgrades	MIPR	Various	U	0	0	NONE	2800	1Q FY06	0	NONE	0	2800	0
TD/D S - JSTDS-SM - Update technical documentation	MIPR	Various	U	0	0	NONE	0	NONE	500	1Q FY07	0	500	0
Subtotal II. Support Costs:				1137	1492		4150		1360		0	8139	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	1895	1Q FY05	0	NONE	0	NONE	0	3914	0
OTE S - JSFDS Operational Assessment (OA) for JSTDS-SM	MIPR	Various	U	0	842	2Q FY05	0	NONE	0	NONE	0	842	0
JSPDS													
OTE S - JSPDS Initial Operational Test and Evaluation (IOT&E)	MIPR	Various	U	0	0	NONE	1937	2Q FY06	0	NONE	0	1937	0
DTE S - JSPDS Shelf life extension testing	MIPR	Various	U	0	0	NONE	0	NONE	225	1Q FY07	0	225	0
JSSED													
DTE S - JSSED developmental test planning/execution	MIPR	AFOTEC, Kirtland AFB, NM	U	0	0	NONE	150	1Q FY06	271	1Q FY07	0	421	0
JSTDS SM													
OTE S - JSTDS-SM Initial Operational Test and Evaluation	MIPR	Various	U	0	0	NONE	5100	2Q FY06	0	NONE	0	5100	0
DTE S - JSTDS-SM Down-selection Testing (DT II)	MIPR	Various	U	0	0	NONE	2300	1Q FY06	0	NONE	0	2300	0
DTE S - JSTDS-SM Down-selection Testing (DT II)	C/CPFF	Battelle, Columbus, OH	C	0	0	NONE	1000	1Q FY06	0	NONE	0	1000	0
DTE S - JSTDS-SM Decontaminant Shelf life extension testing	MIPR	Various	U	0	0	NONE	0	NONE	200	1Q FY07	0	200	0
DTE S - JSTDS-SM Decontaminant testing of objective capabilities	MIPR	Various	U	0	0	NONE	0	NONE	450	1Q FY07	0	450	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - JSTDS-SM Decontaminant testing of objective capabilities	C/CPFF	Battelle, Columbus, OH	C	0	0	NONE	0	NONE	600	1Q FY07	0	600	0
DTE S - JSTDS-SM - Detector testing	MIPR	Various	U	0	0	NONE	0	NONE	2800	1Q FY07	0	2800	0
Subtotal III. Test and Evaluation:				2019	2737		10487		4546		0	19789	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **DE5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	192	1Q FY06	200	1Q FY07	0	392	0
PM/MS S - JSPDS Programmatic Support	MIPR	Various	U	0	0	NONE	180	1Q FY06	200	1Q FY07	0	380	0
JSSED													
PM/MS S - JSSED Service Integrated Product Team Support	MIPR	Various	U	0	0	NONE	373	1Q FY06	1000	1Q FY07	0	1373	0
JSTDS SM													
PM/MS S - JSTDS-SM Programmatic Support	C/CPFF	Various	C	0	0	NONE	900	1Q FY06	0	NONE	0	900	0
PM/MS S - JSTDS-SM 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	35	NONE	0	NONE	0	NONE	0	35	0
Subtotal IV. Management Services:				0	35		2545		1900		0	4480	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ **BA5 - System Development and Demonstration (SDD)**	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**DE5**

TOTAL PROJECT COST:	3156	4264		19242		10638		0	37300	

Exhibit R-4a, Schedule Profile

DATE: February 2005

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-SM			3Q																													
JSFDS Procure test articles for JSTDS-SM down-selection testing				4Q																												
JSFDS Paper down-selection for JSTDS-SM				4Q																												
JSFDS MS B for JSTDS-SM				4Q																												
JSFDS Down-selection testing (DT I) for JSTDS-SM					1Q	—	—	3Q																								
JSFDS MS C (LRIP) for JSTDS-SM							3Q																									

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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-SM								4Q																								
JSFDS Funding Transition								4Q																								
JSPDS																																
Restructuring of Requirements/ORD Approval	>>	2Q																														
JSPDS Compatibility Testing		2Q	3Q																													
JSPDS MS B			3Q																													
JSPDS DT II Testing	1Q	—	—	—	—	—	—	4Q																								
JSPDS IOT&E										2Q	3Q																					
JSPDS MS C (Full Rate Production)													1Q																			
JSSED																																
JSSED - SDD contract award										2Q																						
JSSED - Design and prototype fabrication and test										2Q	—	—	—	—	4Q																	
JSSED - Prototype delivery (20 units at $80K each)																4Q																
JSSED - SDD Prototype testing																	1Q	—	—	—	2Q											
JSSED - Operation Assessment																					2Q											

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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)																																
JSSED - MS C LRIP Decision																							3Q									
JSSED - PQT, PVT and IOT&E																									1Q							
JSSED - DOTE Report/Staffing																										2Q	3Q					
JSSED - Full Rate Production Decision																												4Q				
JSSED - IOC																												4Q				
JSTDS SM																																
JSTDS-SM RFP Release			3Q																													
JSTDS-SM Paper Down-selection				4Q																												
JSTDS-SM MS B				4Q																												
JSTDS-SM Down-selection Testing (DT I)					1Q	—	3Q																									
JSTDS-SM MS C (LRIP)							3Q																									
JSTDS-SM DT II								4Q	—	2Q																						
JSTDS-SM - Develop detector/decontaminant change package									1Q	——		4Q																				
JSTDS-SM IOT&E										2Q	3Q																					
JSTDS-SM Full Rate Production											3Q																					
JSTDS-SM Live Agent Testing													1Q	——		4Q																

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 SM (Cont)																																
JSTDS-SM - Incorporate Detector/decontaminant changes													1Q																			
JSTDS-SM - Test Detector.decontaminant changes														2Q	3Q																	
JSTDS-SM - Upgrade changes													1Q																			
JSTDS-SM - FDDT for JSTDS-SM upgrade														2Q	3Q																	

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	37536	23537	20521	17951	12608	3054	3056	1020	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) Development of a Joint Service Aircrew Mask (JSAM) to replace multiple Service-specific aircrew chemical protective masks. JSAM will be a chemical/bio protection system with positive pressure breathing capabilities. JSAM will be compatible with all appropriate existing life-support equipment and can be used during escape and evasion in a chemical, biological, or radiological dust particulate environment. It is the only mask that will incorporate Chemical, Biological, Radiological, and Nuclear (CBRN) protection and anti-G protection for fighter aircrews; and will provide increased protection with increased comfort and the flexibility of a detachable faceplate.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

(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.

(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.

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

DATE: February 2005

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT PROTECTIVE AIRCREW ENSEMBLE (JPACE)	6391	3527	0	0
RDT&E Articles (Quantity)	500	0	0	0

FY 2004 Accomplishments:

- 4130 JPACE - Continued combined DT/OT with durability and other system level testing, including chemical Man-in-Simulant Test (MIST), aerosol test, and swatch test. Developed and tested contaminated doffing procedures and acquired final safe-to-fly decision from the services.
- 2261 JPACE - Prepared for Independent Operational Test & Evaluation (IOT&E). Purchased 500 test articles (at $591 each) for IOT&E. Continue to develop and update program logistics and technical documentation required to ensure that ensembles will be fully supported when fielded. Updated and finalized garment specifications and patterns based on DT/OT results.

Total 6391

FY 2005 Planned Program:

- 400 JPACE - Finalize program, logistics, and technical documentation required to ensure that ensembles are fully supported.
- 2485 JPACE - Complete IOT&E. Conduct MS C decision for LRIP of ensembles. Prepare documentation for contract option to manufacture LRIP ensembles.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

FY 2005 Planned Program (Cont):

- 642 JPACE - Finalize garment specifications and patterns. Conduct System Verification Review (SVR). Complete MS C for Full Rate Production (FRP) design.

Total 3527

	FY 2004	FY 2005	FY 2006	FY 2007
JS AIRCREW MASK (JSAM)	12022	12134	14837	14544
RDT&E Articles (Quantity)	0	306	0	508

FY 2004 Accomplishments:

- 5767 JSAM - Continued system design, engineering and fabrication activities of the two major JSAM variants (Type I - rotary wing and Type II - fixed wing), to include helmet mounted display units; developed production processes and planned for adequate tooling in preparation for fabrication of units.
- 2928 JSAM - Continued contractor and government developmental test and evaluation and operational test planning activities, to include integration with selected aircraft.
- 3327 JSAM - Continued program management, logistics and sustainment planning. Prepared program and technical documentation.

Total 12022

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

FY 2005 Planned Program:

- 4820 JSAM - Complete Contractor Developmental Testing (DT) for the JSAM rotary wing aircraft variant (Type I), to include the Apache variant (Type IA), and initiate Government DT. Complete material purchase, fabrication, and assembly of JSAM filters, as well as 121 JSAM Apache DT units (at an average unit cost of $2141), and 185 JSAM Type I DT units (at an average unit cost of $1858). Continue documentation and planning in preparation for JSAM Operational Testing (OT).
- 2650 JSAM - Continue system design, engineering and fabrication activities for JSAM Type I and Type II variants, to include helmet mounted display variants; continue to develop production processes and ensure tooling and equipment are adequate to fabricate units.
- 4664 JSAM - Continue contract and government program management, logistics and sustainment planning.

Total 12134

FY 2006 Planned Program:

- 4659 JSAM - 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.
- 5235 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.
- 4943 JSAM - Continue contract and government program management, logistics and sustainment planning.

Total 14837

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

FY 2007 Planned Program:

- 5913 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).
- 4872 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.
- 3759 JSAM - Continue contract and government program management, logistics and sustainment planning.

Total 14544

	FY 2004	FY 2005	FY 2006	FY 2007
JS GENERAL PURPOSE MASK	14411	2919	0	0
RDT&E Articles (Quantity)	0	1000	0	0

FY 2004 Accomplishments:

- 5454 JSGPM - Continued System Demonstration. System Demonstration included system support packages for Production Qualification Testing (PQT) and Initial Operational Testing and Evaluation (IOT&E).
- 835 JSGPM - Continued preparation of program/project documentation. Documentation included the Single Acquisition Management Plan (SAMP) and Performance Specifications.
- 5521 JSGPM - Continued Developmental and Operational Testing. Generated test incident reports and corrective action plans addressing test results during mask design and prototype production.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

FY 2004 Accomplishments (Cont):

- 438 JSGPM - Continued Logistics Support Planning. This effort included development of manuals and finalization of supportability plans.
- 1734 JSGPM - Continued development of the JSCESM as a lightweight complement to the JSGPM against limited threats.
- 429 JSGPM - Conducted support for the development of the Improved Protective Mask (IPM) and completed MS C for IPM.

Total 14411

FY 2005 Planned Program:

- 1509 JSGPM - Complete System Demonstration. System Demonstration includes system support packages for PQT and Multiservice Operational Testing and Evaluation.
- 500 JSGPM - Complete preparation of program/project documentation. Documentation includes the SAMP and performance specifications.
- 700 JSGPM - Complete Development (PQT) and Operational (Limited User Team) Testing. Complete test and evaluation reports. Purchase 1000 test articles (at $150 each) for Multiservice Operational Test and Evaluation.
- 210 JSGPM - Complete developmental Logistics Support Planning. This effort includes completion of manuals and finalization of supportability plans.

Total 2919

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

	FY 2004	FY 2005	FY 2006	FY 2007
PROTECTIVE CLOTHING (JSLIST)	4712	4765	5684	3407
RDT&E Articles (Quantity)	0	0	0	0

FY 2004 Accomplishments:

- 2500 JB2GU and AFS - Initiated developmental testing.
- 400 JB2GU and AFS - Conducted preparations for MS C Full Rate Production (FRP).
- 1189 JB2GU and AFS - Formed project teams, conducted market surveys, prepared acquisition strategies.
- 623 JSLIST IFS - Formed project teams, conducted market surveys, prepared acquisition strategies.

Total 4712

FY 2005 Planned Program:

- 2912 JB2GU and AFS - Complete chemical agent validation testing and complete IOT&E.
- 300 JB2GU and AFS - Complete preparations for MS C Full Rate Production (FRP).
- 1553 IFS - Complete durability testing, complete IOT&E.

Total 4765

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

FY 2006 Planned Program:

- 200 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).
- 1284 JSLIST - Conduct initial design field testing. This field-testing will allow informed design selection decisions.

Total 5684

FY 2007 Planned Program:

- 350 JSLIST - Complete design field testing.
- 100 JSLIST - Purchase production representative items necessary for all Operational Testing (OT).
- 900 JSLIST - Conduct mission OT with service personnel performing specific job specialties while wearing production representative suits.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

FY 2007 Planned Program (Cont):

- 1355 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 3407

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	192	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 192 SBIR

Total 192

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

C. Other Program Funding Summary:

	FY 2004	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	0	1824	7888	21030	42922	33039	10096	Cont	Cont
JI0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	13168	13325	27242	33959	43358	34479	48023	48137	Cont	Cont
JI0015 JOINT PROTECTIVE AIRCREW ENSEMBLE (JPACE)	0	17638	24131	24801	35066	12054	13997	7726	Cont	Cont
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	19184	8164	6343	4883	4988	4788	0	0	0	48350
MA0400 PROTECTIVE CLOTHING	73654	93282	37643	30956	0	0	0	0	0	235535

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

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. One contract was awarded for SDD. The SDD award was made to the offeror whose proposal, based on the established evaluation criteria as written in section M of the solicitation, provided the best value to the government.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IP5**

The current acquisition strategy reflects an evolutionary acquisition approach. The first increment of JSAM development and fielding is for rotary wing systems [the Integrated Helmet And Display Sighting System (IHADSS) followed by non-Helmet Mounted Display (HMD) rotary wing systems]. This effort is under contract with AVOX Systems. Future increments, currently in AVOX contract option segments, are for fixed wing and HMD systems development and fielding. 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).

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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	242	2Q FY05	0	NONE	0	NONE	0	902	570
JSAM													
HW S - Contractor Development	C/CPAF	AVOX, Lancaster, NY	C	13540	2650	2Q FY05	4833	2Q FY06	4870	2Q FY07	0	25893	1831
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	100	1Q FY07	0	100	0
Subtotal I. Product Development:				35558	4051		4833		4970		0	49412	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

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	595	2Q FY05	1010	2Q FY06	146	2Q FY07	0	2540	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	100	1Q FY05	0	NONE	0	NONE	0	681	1000
ILS S - Logistics Support of JSGPM System	MIPR	JPM - IP, Quantico, VA	U	726	100	1Q FY05	0	NONE	0	NONE	0	826	1700
Subtotal II. Support Costs:				5150	1355		1010		146		0	7661	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	935	1Q FY05	0	NONE	0	NONE	0	1133	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	1269	2Q FY06	3354	2Q FY07	0	9656	0
OTE S - Govt Operational Test	MIPR	Various	U	706	549	2Q FY05	1939	2Q FY06	2458	2Q FY07	0	5652	0
DTE S - Contractor Test and Integration	PO	TBS	U	616	961	2Q FY05	1451	2Q FY06	102	2Q FY07	0	3130	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
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	1553	1Q FY05	0	NONE	0	NONE	0	1923	0
OTE S - Protective Clothing OT&E	MIPR	Various	U	0	0	NONE	0	NONE	1250	2Q FY07	0	1250	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

III. Test and Evaluation - 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
OTE SB - Test Methodologies Modeling	MIPR	Various	U	0	0	NONE	0	NONE	1657	1Q FY07	0	1657	0
Subtotal III. Test and Evaluation:				16969	12520		4659		8821		0	42969	

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
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	146	100	1Q FY05	0	NONE	0	NONE	0	246	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	2600	2Q FY05	2921	2Q FY06	3015	2Q FY07	0	12797	0
PM/MS S - Contractor Program Management	C/CPAF	TBS	C	2048	1469	2Q FY05	1414	2Q FY06	599	2Q FY07	0	5530	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

IV. Management Services - 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
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	384	1Q FY06	0	NONE	0	3336	0
PM/MS C - Design/Analysis/Modeling	MIPR	Various		0	0	NONE	5300	1Q FY06	0	NONE	0	5300	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	192	NONE	0	NONE	0	NONE	0	192	0
Subtotal IV. Management Services:				16619	5611		10019		4014		0	36263	

Remarks:

TOTAL PROJECT COST:	74296	23537		20521		17951		0	136305	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IP5**

D. Schedule Profile:

	FY 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							3Q	—	—	2Q																						
MS C Full Rate Production (FRP) Decision								4Q																								
JSAM																																
System Demonstration and Development	>>	—	—	—	—	—	—	—	—	—	—	4Q																				
Development Test				4Q	—	—	—	—	—	—	—	3Q																				
Operational Test (Rotary Wing)												4Q	1Q																			
Operational Test (Fixed Wing)											3Q	—	—	3Q																		
Milestone C (Full Rate Production Decision) - Type I (Rotary) & Type 1a (Apache) variants													1Q																			

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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):

JSGPM

	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
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																									
Material Release									2Q	3Q																						
Full Rate Production (FRP) Review									2Q																							
Multiservices Operational Test and Evaluation (MOT&E) with Production Representative Articles									2Q																							
First Unit Equipped (FUE)/Initial Operational Capability (IOC)												4Q																				

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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):

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	0	20434	77037	25584	17517	8714	5511	3343	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project IS5 INFORMATION SYSTEMS (SDD): This funding supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP).

Efforts funded in this project are: (1) Joint Effects Model (JEM), (2) Joint Operational Effects Federation (JOEF), (3) Joint Warning and Reporting Network (JWARN). These programs were previously funded in CA4/CA5 prior to FY05.

The JEM will be a general-purpose, 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).

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

DATE
February 2005

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

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.

Block 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); crisis planning for the operational users in a COE.

Block 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 block supports planning for consequence management and development of consequence management for military capabilities.

Block III will support deliberate planning for operational and strategic users in a non-networked environment; crisis planning for operational users in a non-COE; crisis planning for strategic users in a non-COE and non-networked environment. The third block extends consequence management capabilities to include civilian facilities.

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

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT: IS5

The JWARN will provide standard integration and analysis of NBC detection information with 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.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT EFFECTS MODEL	0	8131	22752	1782
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 1554 JEM Block I - Continue conduct of Independent Validation and Verification (IV&V). Prepare for and achieve Class Accreditation.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IS5**

FY 2005 Planned Program (Cont):

- 4591 JEM Block I - Continue software development and initiate Government developmental testing. Finalize operational test plans. Initiate Operational Testing (OT). Provide program financial management, scheduling, planning and reporting.
- 1986 JEM Block I - Perform software maintenance in support of Developmental Testing (DT) and OT. Initiate establishment of the Software Support Activity (SSA).

Total 8131

FY 2006 Planned Program:

- 2252 JEM Block I - Perform software maintenance through Initial Operational Capability (IOC).
- 2798 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.
- 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.
- 1832 JEM Block I - Implement and certify the CBRN Database. Provide program financial management, scheduling, planning and reporting.
- 4131 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 Follow-on Operational Test and Evaluation.
- 1676 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.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

FY 2006 Planned Program (Cont):

- 5713 JEM Block II - Initiate and complete Block II system development and demonstration, incorporating Urban Missile Defense, Missile Intercept, Backtracking to Source, 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).

Total 22752

FY 2007 Planned Program:

- 1782 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 (NORAD/NORTHCOM, PFPA, etc.).

Total 1782

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT OPERATIONAL EFFECTS FEDERATION	0	0	13563	8329
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IS5**

FY 2006 Planned Program:

- 2041 JOEF Block 1 - Continue SPODs, APODs and automated TTPs software development.
- 5311 JOEF Block 1 - Initiate the development of mobile force capability to meet the Services' requirements.
- 804 JOEF Block 1 - Continue the integration with JEM, JWARN and data base management systems.
- 1992 JOEF Block 1 - Continue APODs, SPODs and automated TTPs, and initiate mobile force software development for crisis planning for operational levels of war.
- 807 JOEF Block 1 - Develop COE interfaces for above functions.
- 2157 JOEF Block 1 - Develop test, validation and verification plans, start Development Testing (DT) and begin software validation and verification.
- 249 JOEF Block 1 - Conduct Systems Engineering, Warfighter, T&E, and logistics IPTs.
- 202 JOEF Block 1 - Conduct market research for capabilities that can provide additional capabilities for JOEF and develop training material.

Total 13563

FY 2007 Planned Program:

- 5205 JOEF Block I - Complete software development for APODs, SPODs, automated TTPs and Mobile Force requirements for the Services for strategic level of war.
- 737 JOEF Block I - Develop COE interface.
- 1691 JOEF Block I - Complete developmental testing and start operational testing.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

FY 2007 Planned Program (Cont):

- 446 JOEF Block I - Continue software validation and verification.
- 147 JOEF Block I - Continue to conduct Systems Engineering, Warfighter, T&E, and logistics IPTs.
- 103 JOEF Block I - Complete development of training material.

Total 8329

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT WARNING & REPORTING NETWORK (JWARN)	0	12136	40722	15473
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 6604 JWARN - Congressional Add of 2083. Continue Block II development.
- 3013 JWARN - Continue Block II DT/OA planning.
- 2519 JWARN - Continue program management and oversight.

Total 12136

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**IS5**

FY 2006 Planned Program:

- 7119 JWARN - Complete Block II development.
- 5475 JWARN - Conduct Block II Developmental Test (DT).
- 4008 JWARN - Conduct Block II Interoperability Tests (IOT).
- 4502 JWARN - Conduct Joint Component Interface Device (JCID) tests.
- 498 JWARN - Develop comprehensive DT test results and reports.
- 3499 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 40722

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

FY 2007 Planned Program:

- 504 JWARN - Generate comprehensive Operational Assessment (OA) report.
- 3974 JWARN - Conduct Block II OA.
- 898 JWARN - Conduct Milestone C review.
- 1802 JWARN - Coordinate JCID Low Rate Initial Production (LRIP).
- 1714 JWARN - Coordinate JCID First Article Test (FAT).
- 2162 JWARN - Conduct MOT&E event planning.
- 2419 JWARN - Continue program management and oversight.
- 1000 JWARN (T&E Capability) - Test and validate software and hardware for the Operational Test (OT) Stimulator demonstration system.
- 1000 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 15473

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	167	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

FY 2005 Planned Program:

- 167 SBIR

Total 167

C. Other Program Funding Summary:

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	1102	5913	5183	7151	21142	21254	22410	28576	Cont	Cont
JC0208 JOINT EFFECTS MODEL (JEM)	0	994	2024	2029	1031	0	0	0	0	6078
JC0209 JOINT OPERATIONAL EFFECTS FEDERATION (JOEF)	0	0	0	0	0	0	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**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 will be a near real-time course of action analysis tool developed in three blocks. It will use 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:

Block 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.

Block II will support deliberate and crisis planning for the tactical users in COE, Non-COE, and Non-Networked environments; 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. Block II also supports planning for consequence management and development of consequence management for military capabilities.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

Block 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 environment. Block III extends consequence management capabilities to include civilian facilities.

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)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	TBD	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	TBD	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	TBD	C	0	0	NONE	4934	2Q FY06	1294	2Q FY07	0	6228	0
SW S - Integration & Interoperability	MIPR	SPAWAR Systems Center, San Diego, CA	U	0	0	NONE	2001	1Q FY06	0	NONE	0	2001	0
JWARN													
SW S - JWARN System Development and Demonstration	C/FPI	Northrop Grumman - Winterpark FL	C	0	6604	3Q FY05	27322	2Q FY06	0	NONE	0	33926	0
Subtotal I. Product Development:				0	8701		44524		1892		2524	57641	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE
February 2005

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT
IS5

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	2834	2Q FY05	5106	2Q FY06	202	2Q FY07	695	8837	0
ES S - JEM Data Model	MIPR	Various	U	0	0	NONE	2129	2Q FY05	0	NONE	0	2129	0
JOEF													
TD/D SB - Integration, System Engineering, Test and Logistics	MIPR	Various	U	0	0	NONE	3089	2Q FY06	3124	2Q FY07	0	6213	0
Subtotal II. Support Costs:				0	2834		10324		3326		695	17179	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	1442	2Q FY05	2822	2Q FY06	139	1Q FY07	650	5053	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	1011	2Q FY06	237	2Q FY07	0	1248	0
OTHT S - JOEF Independent Verification and Validation	MIPR	Various	U	0	0	NONE	822	2Q FY06	1684	2Q FY07	0	2506	0
OTE S - JOEF OT Plan & Conduct	MIPR	Various	U	0	0	NONE	0	NONE	151	1Q FY07	0	151	0
JWARN													
OTHT SB - JWARN Block II Development Test	MIPR	Various	U	0	3013	3Q FY05	9974	1Q FY06	11723	1Q FY07	0	24710	0
Subtotal III. Test and Evaluation:				0	5287		16165		14128		1244	36824	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	649	1Q FY07	100	2567	0
JOEF													
PM/MS S - Program Office - Planning and Programming	MIPR	Various	U	0	0	NONE	1706	1Q FY06	1839	1Q FY07	0	3545	0
JWARN													
PM/MS S - JWARN Management Support	MIPR	Various	U	0	2519	3Q FY05	3426	1Q FY06	3750	1Q FY07	0	9695	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	167	NONE	0	NONE	0	NONE	0	167	0
Subtotal IV. Management Services:				0	3612		6024		6238		100	15974	

Remarks:

TOTAL PROJECT COST:	0	20434		77037		25584		4563	127618	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **IS5**

D. Schedule Profile:

	FY 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	>>	—	—	—	—	—	—	3Q																								
BLK I - Milestone B Decision		2Q																														
BLK I - Award System Development and Demonstration (SDD) Contract		2Q																														
BLK I - In Process Review (IPR)				4Q																												
BLK I - Developmental Testing (DT) (Contractor)					1Q	—	3Q																									
BLK I - DT (Government)						2Q	—	4Q																								
BLK I - Software Maintenance				4Q	—	—	—	—	1Q																							
BLK I - Establish, Train, Stand Up Software Support Activity							3Q	—	—	3Q																						
BLK I - Operational Testing (OT)								4Q	1Q																							
BLK I - Milestone C (Limited Deployment) and Full Rate Production (FRP)										2Q																						
BLK I - Production and Deployment										2Q	—	—	—	—	—	—	—	2Q														
BLK I - Initial Operational Capability (IOC)												4Q																				
JOEF																																

Exhibit R-4a, Schedule Profile

DATE: February 2005

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)																																
Concept and Technology Development Phase	>>	—	—	—	—	—	—	4Q																								
Prototype Development		2Q	—	—	—	—	—	4Q																								
Focused Technology Assessment II (Mobile Forces)		2Q	3Q																													
Focused Technology Assessment III (Other Mobile Forces Models)						2Q																										
BLK I - Milestone B							3Q																									
BLK I - Award Systems Development and Demonstration (SDD) Contract								4Q																								
BLK I - Software Development									1Q	—	—	—	—	—	—	3Q																
BLK I - Early Operational Assessment (EOA)																3Q																
BLK I - Interim Progress Review																4Q																
BLK I - Developmental Testing (DT)																4Q																
BLK I - Operational Testing (OT)																4Q	1Q															
BLK I - Milestone C (Limited Deployment)																		2Q														
BLK I - Full Rate Production (FRP) Decision																				4Q												

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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)																																
BLK I - Initial Operational Capability (IOC)																				4Q												
JWARN																																
JWARN BLK II - System Design and Development (SDD) Performance	>>	—	—	—	—	—	—	—	—	—	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 - 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														
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

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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
JWARN (Cont)																																
JWARN BLK II - Full Operational Capability																										2Q						

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	7053	10087	61448	72125	93784	94061	77023	60858	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, Vaccinia Immune Globulin, and Equine Encephalitis vaccines.

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

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)

PROJECT: MB5

The Critical Reagents Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/biological threat agent and genomic reference materials, and DNA biological detection requirements from Technology Development through production. The CRP ensures the availability of 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/biological threat agent and genomic reference materials based identification requirements within the biological warfare (BW) detection program. Supported systems include the Biological Integrated Detection System (BIDS), Portal Shield, Joint Biological Agent and Identification System (JBAIDS), and the Joint Biological Point Detection System (JBPDS) Blocks I and II. This program also supports the development and manufacture of individual Handheld Immunochromatographic Assays (HHA), freeze-dried electrochemiluminescence (ECL) immunoassays, and the Department of Defense (DoD) biological sampling kit. 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. Blocks II and III technologies will be selected based on their reliability, technological maturity, and supportability.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
CRITICAL REAGENTS PROGRAM	3476	3003	10098	3258
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

FY 2004 Accomplishments:

- 700 CRP - Completed insertion of International Task Force (ITF)-6A agents into polymerase chain reaction (PCR) and electrochemiluminescence (ECL) formats.
- 780 CRP - Continued antibody development of ITF-6B targets.
- 1560 CRP - Continued expansion of select agent reference material, validation of assays, and scale up of select agent reference material.
- 436 CRP - Developed and instituted automation technology solutions to improve processes and operations of the clinical laboratory.

Total 3476

FY 2005 Planned Program:

- 802 CRP - Continue antibody development of ITF-6B targets.
- 1460 CRP - Continue expansion of select agent reference material, validation of assays, and scale up of select agent reference material.
- 741 CRP - Initiate development of PCR and ECL assays to ITF-6B.

Total 3003

FY 2006 Planned Program:

- 2179 CRP - Complete development of PCR and ECL assays, and antibodies to ITF-6B.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

FY 2006 Planned Program (Cont):

- 4400 CRP - Continue expansion of select agent reference material, validation of assays, and scale up of select agent reference material. Initiate expansion of unified cell culture collection (UCC).
- 3519 CRP - Initiate and complete a formal Quality Assurance/Quality Control (QA/QC), validation, Developmental Testing (DT), and Operational Testing (OT) program to encompass the transition and fielding of biological detection assays.

Total 10098

FY 2007 Planned Program:

- 1121 CRP - Continue to expand UCC, select agent reference material, validation of assays, and scale up of select agent reference material.
- 1212 CRP - Initiate immunoassay and genomic assay validation for ITF-6A, ITF-6B, and ITF-6C agents.
- 925 CRP - Integrate current Good Manufacturing Practices (cGMP) antibodies in support of medical diagnostics.

Total 3258

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM	3577	4571	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

FY 2004 Accomplishments:

- 1011 JBAIDS Block I - Continued Developmental Testing (DT).
- 1638 JBAIDS Block I - Developed hardware and assays; delivered test articles; conducted hardware qualification testing; and continued hardware engineering change proposal (ECP) process; initiated hardware upgrading and biological warfare (BW) assay development.
- 928 JBAIDS Block I - Completed Operational Assessment (OA).

Total 3577

FY 2005 Planned Program:

- 2191 JBAIDS Blk I - Complete DT, hardware ECP process and upgrading, and BW assay development. Initiate and complete OT. Achieve Milestone C/LRIP.
- 970 JBAIDS Blk I - Develop contract ECPs.
- 560 JBAIDS Blk I - Conduct New Equipment Training (NET) of systems.
- 850 JBAIDS Blk I - Conduct FDA clinical trials and submit FDA 510(k) for Anthrax.

Total 4571

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM INCREMENT II	0	0	8323	10374
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**MB5**

FY 2006 Planned Program:

- 5200 JBAIDS Blk II - Award developmental contract to support purchase of development prototype articles, developmental and operational testing, technical manual development, contractor logistics support, FDA 510(k) activities, and test plans/procedures. Achieve Milestone B.
- 923 JBAIDS Blk II - Initiate Developmental Testing (DT), Operational Assessment (OA), and Operational Testing (OT).
- 856 JBAIDS Blk II - Initiate Government Furnished Material (GFM) manufacturing support of toxin test sample manufacturing.
- 592 JBAIDS Blk II - Initiate and complete toxin Food and Drug Administration (FDA) interface planning efforts to determine pre-marketing approval (PMA)/510(k) applicability.
- 752 JBAIDS Blk II - Initiate system DT training efforts.

Total 8323

FY 2007 Planned Program:

- 1632 JBAIDS Blk II - Complete DT, OA, and OT.
- 7268 JBAIDS Block II - Provide developmental contract incremental funding to support developmental and operational testing, technical manual development, contractor logistics support, FDA 510(k) activities, and test plans/procedures.
- 448 JBAIDS Block II - Continue GFM manufacturing support of toxin test sample manufacturing.
- 513 JBAIDS Block II - Continue DT system training efforts.
- 513 JBAIDS Block II - Initiate FDA toxin 510(k) submittals and clinical trials.

Total 10374

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

	FY 2004	FY 2005	FY 2006	FY 2007
BOTULINUM VACCINE	0	0	27743	18904
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 15537 JVAP - Recombinant Botulinum Vaccine - Initiate Phase 2 clinical trial.
- 1820 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and stability testing.
- 10386 JVAP - Recombinant Botulinum Vaccine - Complete manufacturing process validation and initiate consistency lot production.

Total 27743

FY 2007 Planned Program:

- 10168 JVAP - Recombinant Botulinum Vaccine - Continue Phase 2 clinical trial.
- 3160 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and stability testing.
- 5576 JVAP - Recombinant Botulinum Vaccine - Complete consistency lot production.

Total 18904

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

	FY 2004	FY 2005	FY 2006	FY 2007
ENCEPHALITIS VACCINE	0	0	5000	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2006 Planned Program:

- 2000 JVAP - Equine Encephalitis Vaccine - Initiate Phase 2 clinical trial immunological testing.
- 3000 JVAP - Equine Encephalitis Vaccine - Initiate passive transfer studies with samples from the Phase 2 clinical trial.

Total 5000

	FY 2004	FY 2005	FY 2006	FY 2007
PLAGUE VACCINE	0	0	10284	39589
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

FY 2006 Planned Program:

- 9394 JVAP - Plague Vaccine - Continue 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.

Total 10284

FY 2007 Planned Program:

- 3051 JVAP - Plague Vaccine - Complete Phase 2 clinical trial of US candidate.
- 4964 JVAP - Plague Vaccine - Continue non-clinical studies of US candidate.
- 10985 JVAP - Plague Vaccine - Complete full-scale manufacturing process development of US candidate.
- 20489 JVAP - Plague Vaccine - Initiate Phase 3 clinical trial of US candidate.
- 100 JVAP - Plague Vaccine - Continue stability testing of US candidate.

Total 39589

	FY 2004	FY 2005	FY 2006	FY 2007
BIOLOGICAL VACCINES	0	2430	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

FY 2005 Planned Program:

- 2430 Congressional Add. Conduct ParalellaVax Rapid Vaccine Testing Technology study.

Total 2430

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	83	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 83 SBIR

Total 83

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

C. Other Program Funding Summary:

	FY 2004	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)	9873	18386	21188	5650	14690	11162	8476	0	0	89425
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	59706	80478	38930	39466	40741	43498	46080	52906	Cont	Cont
JX0210 CRITICAL REAGENTS PROGRAM (CRP)	1799	1843	2223	2274	2350	2379	2586	2695	Cont	Cont

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

D. Acquisition Strategy:

CRP

The Critical Reagents Program (CRP) is designed along a stepwise strategy. After successful end item scale-up, end items are transitioned to full-scale production in support of the detection platforms that are supported. Reagents have been developed to meet baseline BIDS, Portal Shield, JBAIDS, and JBPDS Block I requirements. Performance improvements in those reagents must be pursued. A large portion of the FY05-09 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 ECL 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 biological threat agent and genomic reference materials in support of ongoing detection reagent validation will be a major focus between FY05 and FY10.

JBAIDS

JBAIDS is an evolutionary development program. Block 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. Block I development effort focuses on militarizing and hardening of critical identification technologies based on a commercial off-the-shelf (COTS) item and FDA clearance for the assays and hardware.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

JBAIDS II	JBAIDS is an evolutionary development program. Block II will be a rapid development and fielding effort to deliver critical capability to identify toxins to the field in the shortest time. Block 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.
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 initial development through FDA licensure.
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 (to Milestone B) of a Venezuelan Equine Encephalitis vaccine, a requirement in the Joint Chiefs of Staff threat list.
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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 Agent Reference Material	MIPR	USAMRIID, Fort Detrick, MD & Dugway Proving Grounds, DPG, UT	U	636	450	1Q FY05	1536	2Q FY06	610	2Q FY07	0	3232	0
CRP - Development of Select Agent Reference Material	MIPR	Naval Medical Research Center, Silver Spring, MD	U	205	180	1Q FY05	1206	2Q FY06	205	2Q FY07	0	1796	0
CRP - Development of Select Agent Reference Material	MIPR	USAMRIID Vet Sci Division, Fort Detrick, MD	U	167	225	2Q FY05	1296	3Q FY06	425	2Q FY07	0	2113	0
JBAIDS													
SW SB - JBAIDS Blk 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 Blk II - Development Prototype Article Production	C/CPFF	TBS	C	0	0	NONE	3329	1Q FY06	6878	1Q FY07	0	10207	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

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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													
HW S - Vaccine Development - Includes Phase 2 clinical trial immunological testing and passive transfer studies	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	2000	1Q FY06	0	NONE	0	2000	0
VAC PLG													
HW S - Includes validation and consistency lot production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	3191	1Q FY06	12340	1Q FY07	0	15531	0
VACCINES													
HW S - ParallelaVax Rapid Vaccine Testing Technology	SS/FP	TBD	C	0	972	4Q FY05	0	NONE	0	NONE	0	972	0
Subtotal I. Product Development:				10260	2157		21168		26351		0	59936	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

II. Support Costs	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 Agent Reference Material Validation	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	217	520	2Q FY05	785	2Q FY06	720	2Q FY07	0	2242	0
CRP - Select Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground, Dugway, UT	U	0	230	2Q FY05	415	2Q FY06	350	2Q FY07	0	995	0
CRP - Select Agent Reference Material Validation	C/CPFF	TBS	C	0	414	2Q FY05	315	2Q FY06	0	NONE	0	729	0
JBAIDS													
TD/D SB - JBAIDS Blk I - Joint Services Training	MIPR	AMEDD, Fort Sam Houston, TX	U	310	470	1Q FY05	0	NONE	0	NONE	0	780	0
TD/D SB - JBAIDS Blk I - Government Labs Support	MIPR	USAMRIID, AFIOH, AFIP, and DPG	U	612	565	2Q FY05	0	NONE	0	NONE	0	1177	0
TD/D SB - JBAIDS Blk I - 510(k) Package, Test Plans, Technical Data/Manuals, Assay Patents	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	1119	155	1Q FY05	0	NONE	0	NONE	0	1274	0
JBAIDS II													
TD/D C - JBAIDS Block II - Government Labs/Regulatory Support	MIPR	Dugway Proving Ground, DPG, UT	U	0	0	NONE	720	2Q FY06	218	2Q FY07	0	938	0
TD/D C - JBAIDS Blk II - Government Labs/Regulatory Support	MIPR	TBS (Various)	U	0	0	NONE	306	3Q FY06	213	3Q FY07	0	519	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2005 Cost	FY2005 Award Date	FY2006 Cost	FY2006 Award Date	FY2007 Cost	FY2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TD/D C - JBAIDS Block 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 Blk II - Training Efforts	MIPR	AMEDD Center & School, Ft. Sam Houston, TX	U	0	0	NONE	262	2Q FY06	273	2Q FY07	0	535	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
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	5839	1Q FY07	0	7359	0
VACCINES													
TD/D SB - ParallelaVax Rapid Vaccine Testing Technology	SS/FP	TBD	C	0	365	4Q FY05	0	NONE	0	NONE	0	365	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 II. Support Costs:				2258	2719		9294		10688		0	24959	

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
CRP													
CRP - Conformance Testing of Select Agent Reference Material	MIPR	Naval Medical Research Center, Silver Spring, MD	U	264	398	1Q FY05	1169	1Q FY06	446	1Q FY07	0	2277	0
CRP - Test & Evaluation of Select Agent Reference Material	MIPR	USAMRIID Vet Sci Division, Frederick, MD	U	155	122	1Q FY05	918	3Q FY06	170	2Q FY07	0	1365	0
CRP - Test & Evaluation of Select Agent Reference Material	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	296	207	1Q FY05	942	1Q FY06	0	NONE	0	1445	0
JBAIDS													
OTHT SB - JBAIDS Blk I - Conduct DT	MIPR	USAMRIID, Fort Detrick, MD & AFIOH, Brooks City Base, TX	U	1183	320	1Q FY05	0	NONE	0	NONE	0	1503	0
DTE SB - JBAIDS Blk I - Conduct OT	MIPR	AFOTEC, Kirtland AFB, NM	U	1111	1343	1Q FY05	0	NONE	0	NONE	0	2454	0
DTE SB - JBAIDS Blk I - Assay and Protocol Testing	MIPR	Dugway Proving Ground, UT	U	778	250	1Q FY05	0	NONE	0	NONE	0	1028	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 C - JBAIDS Blk I - Conduct DT and OT	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	0	440	1Q FY05	0	NONE	0	NONE	0	440	0
JBAIDS II													
DTE C - JBAIDS Blk II - Conduct DT, OA, OT, and Clinical Trials	MIPR	TBS (Various)	U	0	0	NONE	2497	1Q FY06	1367	3Q FY07	0	3864	0
VAC BOT													
OTHT S - Testing, evaluation and clinical trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	10386	1Q FY06	7063	1Q FY07	0	17449	0
VAC ENC													
OTHT S - Testing, evaluation, and clinical trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	1500	1Q FY06	0	NONE	0	1500	0
VAC PLG													
OTHT S - Vaccine Development - Includes Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	3850	1Q FY06	14792	1Q FY07	0	18642	0
VACCINES													
OTHT S - ParallelaVax Rapid Vaccine Testing Technology	SS/FP	TBD		0	729	4Q FY05	0	NONE	0	NONE	0	729	0
Subtotal III. Test and Evaluation:				3787	3809		21262		23838		0	52696	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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	C/CPFF	TBS	C	672	71	1Q FY05	826	3Q FY06	172	3Q FY07	0	1741	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	187	93	4Q FY05	488	4Q FY06	96	4Q FY07	0	864	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	63	93	4Q FY05	202	4Q FY06	64	4Q FY07	0	422	0
JBAIDS													
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	177	141	4Q FY05	0	NONE	0	NONE	0	318	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
PM/MS S - Program Management Support	C/FFP	TBS	C	482	463	3Q FY05	0	NONE	0	NONE	0	945	0
JBAIDS II													
PM/MS S - JBAIDS Blk 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 Blk II - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	589	4Q FY06	702	4Q FY07	0	1291	0
PM/MS S - JBAIDS Blk II - Program Management Support	C/FFP	TBS	C	0	0	NONE	335	3Q FY06	232	3Q FY07	0	567	0
VAC BOT													
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	0	NONE	547	4Q FY06	372	4Q FY07	0	919	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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, Frederick, MD	U	0	0	NONE	820	4Q FY06	558	4Q FY07	0	1378	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/FFP	TBS	C	0	0	NONE	1367	1Q FY06	929	1Q FY07	0	2296	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	1913	1Q FY06	1301	1Q FY07	0	3214	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	C/CPFF	TBS	C	0	0	NONE	225	1Q FY06	0	NONE	0	225	0
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	779	4Q FY07	0	982	0

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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, Frederick, MD	U	0	0	NONE	304	4Q FY06	1168	4Q FY07	0	1472	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/FFP	TBS	C	0	0	NONE	507	1Q FY06	1946	1Q FY07	0	2453	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	709	3Q FY06	2725	3Q FY07	0	3434	0
VACCINES													
PM/MS S - ParallelaVax Rapid Vaccine Testing Technology	SS/FP	TBD	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	83	NONE	0	NONE	0	NONE	0	83	0
Subtotal IV. Management Services:				1759	1402		9724		11248		0	24133	

Remarks:

TOTAL PROJECT COST:	18064	10087		61448		72125		0	161724	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

D. Schedule Profile:

	FY 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 - Antibody Development of ITF-6B Agents	>>											4Q																				
CRP - Select Agent Reference Material Efforts to ITF-6A and ITF-6B	>>																	2Q														
CRP - Development and Upgrade of PCR and ECL Assays to ITF-6A and ITF-6B Agents	1Q												1Q																			
CRP - Assay Validation & Quality Assurance/Quality Control of ITF-6A, ITF-6B, and ITF-6B									1Q																	2Q						
CRP - Integrate Current Good Manufacturing Practices (cGMP) Antibodies													1Q						4Q													
CRP - Initiate Immunoassay and Genomic Assay Validation														2Q									3Q									
JBAIDS																																
JBAIDS Block I - Procure Systems for Engineering Design Test (EDT)/Developmental Test (DT)	>>	2Q																														

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

D. Schedule Profile (cont):

	FY 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 Block I - EDT, DT, Qualification Testing, and Assay Development	2Q	—	—	—	2Q																											
JBAIDS Block I - Conduct OA				4Q																												
JBAIDS Block I - Milestone C/Low Rate Initial Production (LRIP) Decision					1Q																											
JBAIDS Block I - Conduct FDA Clinical Trials and Submit 510(k) for Anthrax					1Q	—	3Q																									
JBAIDS Block I - Initial Operational T&E							3Q																									
JBAIDS Block I - Full Rate Production (FRP) Decision								4Q																								
JBAIDS II																																
JBAIDS Block II - Milestone B									1Q																							
JBAIDS Block II - FDA Toxin 510(k) Submittal and Clinical Trials													2Q	—	—	—	—	—	—	4Q												
JBAIDS Block II - FDA Clearance of 5 Toxins																				4Q												
JBAIDS Block II - Developmental Testing (DT), Operational Assessment (OA), and Operational Testing (OT)											3Q	—	—	—	—	4Q																

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

D. Schedule Profile (cont):

	FY 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 Block II - JBAIDS DT and OT Training											3Q									3Q												
JBAIDS Block II - Milestone C (Low Rate Initial Production [LRIP]) Decision																	1Q															
JBAIDS Block II - Full Rate Production (FRP) Decision																		2Q														
VAC BOT																																
Non-Clinical Testing	>>															4Q																
Milestone B							3Q																									
Phase 2 Clinical Trial (A/B)									1Q								1Q															
Consistency Lot Production												4Q			3Q																	
Phase 3 Clinical Trial (A/B)																		2Q									3Q					
Biological Licensure Application																															3Q	
Milestone C																																4Q
VAC ENC																																
Milestone B									1Q																							
Initiate Phase 2 Immunological Testing										2Q		4Q																				
Initiate Passive Transfer Studies											3Q	4Q																				

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MB5**

D. Schedule Profile (cont):

	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
VAC PLG	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Non-Clinical Studies	>>																			4Q												
Current Good Manufacturing Practices (cGMP) Pilot Lot	1Q			4Q																												
Milestone B									1Q																							
Phase 2 Clinical Trial								4Q								4Q																
Milestone C																					1Q											
Phase 3 Clinical Trial																3Q								4Q								
Consistency Lot Production																3Q												2Q				
Biological Licensure Application (BLA) Submission																																1Q
Full Scale Manufacturing Process Development			2Q													4Q																
VAC SPX																																
VIG-Clinical Trials	1Q																															
VIG-Biological Licensure Application (BLA) Submission			3Q					4Q																								
VIG-FDA Licensure/Full Rate Production In Process Review (IPR)								4Q																								

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MC5**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	1402	1391	6509	6529	38669	29081	13962	11952	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) Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP) used as a pretreatment against nerve agent poisoning; 2) Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), which is a topical skin protectant; 3) Antidote Treatment, Nerve Agent, Autoinjector (ATNAA), which is a multi-chambered autoinjector for delivery of atropine and an oxime; and 4) Advanced Anticonvulsant System (AAS), which will be used as a treatment for seizures from exposure to nerve agents.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
ADVANCED ANTICONVULSANT SYSTEM	0	0	6509	6529
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MC5**

FY 2006 Planned Program:

- 2884 AAS - Complete pre-clinical and acute toxicology studies (optimum serum levels of midazolam and neuropathological analysis studies).
- 1360 AAS - Initiate Phase 2 clinical safety studies (definitive clinical efficacy/status epilepticus).
- 2265 AAS - Continue process development/current Good Manufacturing Practices (cGMP) requirements.

Total 6509

FY 2007 Planned Program:

- 3373 AAS - Continue Phase 2 clinical studies (definitive clinical efficacy/status epilepticus).
- 3008 AAS - Continue process development/cGMP requirements.
- 148 AAS - Initiate Developmental Testing/Operational Testing (DT/OT) of packaging.

Total 6529

	FY 2004	FY 2005	FY 2006	FY 2007
MEDICAL CHEMICAL DEFENSE	1402	1380	0	0
RDT&E Articles (Quantity)	0	0	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**MC5**

FY 2004 Accomplishments:

- 68 SERPACW agents - Completed production line process validation and field trials.
- 143 SERPACW agents - Continued FDA manufacturing requirements, redesigned packaging for field durability, and shelf-life monitoring.
- 150 SERPACW agents - Conducted packaging engineering study.
- 232 ATNAA - Completed four-year shelf-life submission to FDA.
- 96 ATNAA - Initiated fifth-year shelf-life studies and FDA required post-marketing studies.
- 713 SNAPP - Continued FDA required post approval studies.

Total 1402

FY 2005 Planned Program:

- 174 SERPACW agents - Complete FDA manufacturing requirements, redesign packaging for field durability and shelf-life monitoring.
- 366 SERPACW agents - Complete FDA required post-marketing studies (including compatibility study with M291).
- 290 ATNAA - Complete fifth-year shelf-life studies and FDA required post-marketing studies.
- 550 SNAPP - Complete FDA required post approval studies.

Total 1380

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MC5**

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	11	0	0
RDT&E Articles (Quantity)	0	0	0	0

FY 2005 Planned Program:

- 11 SBIR

Total 11

C. Other Program Funding Summary: N/A

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**MC5**

D. Acquisition Strategy:

AAS

Medical Identification and Treatment Systems (MITS) acts 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 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.

BSCAV

Medical Identification and Treatment Systems (MITS) acts 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 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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**MC5**

* Starting in FY06, all Medical Chemical Defense Program products transition to individual product line items under their respective Program Elements.

INATS

Medical Identification and Treatment Systems (MITS) acts 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 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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**	**MC5**

MEDCHEM

Medical Identification and Treatment Systems (MITS) acts 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 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.

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - Pilot Lot & Small/Large Scale-Up Production	C/CPFF	TBS	C	0	0	NONE	1956	2Q FY06	1959	2Q FY07	0	3915	0
MEDCHEM													
SERPACWA Manufacturing and Shelf-Life Monitoring	C/FFP	McKesson BioServices, Rockville, MD	C	345	31	1Q FY05	0	NONE	0	NONE	0	376	0
SERPACWA FDA Manufacturing Requirements	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	83	22	3Q FY05	0	NONE	0	NONE	0	105	0
Subtotal I. Product Development:				428	53		1956		1959		0	4396	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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, IND, and NDA Support Efforts	C/CPFF	TBS	C	0	0	NONE	994	2Q FY06	998	2Q FY07	0	1992	0
MEDCHEM													
ATNAA and SERPACWA FDA Regulatory Requirements	MIPR	USAMMDA, Fort Detrick, MD	U	220	63	1Q FY05	0	NONE	0	NONE	0	283	0
SNAPP NDA Approval and Post Marketing Requirements	MIPR	USAMMDA, Fort Detrick, MD	U	198	57	2Q FY05	0	NONE	0	NONE	0	255	0
Subtotal II. Support Costs:				418	120		994		998		0	2530	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - Test & Evaluation of Animal Efficacy and Clinical Studies	C/CPFF	TBS	C	0	0	NONE	2597	2Q FY06	2610	2Q FY07	0	5207	0
MEDCHEM													
SERPACWA - Durability Study	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	122	38	3Q FY05	0	NONE	0	NONE	0	160	0
SERPACWA - FDA Required Post Marketing Studies (Stability Testing)	C/FFP	McKesson BioServices, Rockville, MD	C	0	169	2Q FY05	0	NONE	0	NONE	0	169	0
SERPACWA - FDA Required Post Marketing Studies	MIPR	USAMMDA, Fort Detrick, MD	U	0	145	3Q FY05	0	NONE	0	NONE	0	145	0
ATNAA Shelf-life Studies	MIPR	USAMMDA, Fort Detrick, MD	U	644	248	1Q FY05	0	NONE	0	NONE	0	892	0
SNAPP - FDA Required Post Marketing Studies	MIPR	USAMRAA, Fort Detrick, MD; USAMRICD, Edgewood, MD; WRAIR, SS, MD	U	932	412	3Q FY05	0	NONE	0	NONE	0	1344	0
SNAPP - FDA Required Post Marketing Studies	MIPR	USAMMDA, Fort Detrick, MD	U	253	62	2Q FY05	0	NONE	0	NONE	0	315	0
Subtotal III. Test and Evaluation:				1951	1074		2597		2610		0	8232	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE: **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT: **MC5**

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	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 - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	128	4Q FY06	128	4Q FY07	0	256	0
AAS - Chem Bio Medical Systems	Allot	CBMS, Frederick, MD	U	0	0	NONE	192	4Q FY06	193	4Q FY07	0	385	0
AAS - Program Management Support	C/FFP	TBS	C	0	0	NONE	642	1Q FY06	641	1Q FY07	0	1283	0
MEDCHEM													
Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	18	17	4Q FY05	0	NONE	0	NONE	0	35	0
Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	56	43	4Q FY05	0	NONE	0	NONE	0	99	0
Program Management Support	C/FFP	TBS	C	315	73	1Q FY05	0	NONE	0	NONE	0	388	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	11	NONE	0	NONE	0	NONE	0	11	0
Subtotal IV. Management Services:				389	144		962		962		0	2457	

Remarks:

TOTAL PROJECT COST:	3186	1391		6509		6529		0	17615	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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 - Pre-Clinical Studies	>>											3Q																				
AAS - Phase 1 Clinical Studies						2Q		4Q																								
AAS - Investigational New Drug (IND)	1Q				1Q																											
AAS - cGMP Manufacturing Processes					1Q												1Q															
AAS - Milestone B									1Q																							
AAS - New Drug Application (NDA) Submission																					3Q											
AAS - Phase 2 Clinical Studies											3Q									4Q												
MEDCHEM																																
SNAPP - FDA Required Post Marketing Studies	>>							4Q																								
SERPACWA - FDA Required Post Marketing Studies	>>									2Q																						
ATNAA - Shelf-life Extension/Stability Studies	>>							4Q																								

BUDGET ACTIVITY 6
RDT&E MGT SUPPORT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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		56059	36434	81425	81417	81380	82946	77819	81483	Continuing	Continuing
0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	44612	36434	81425	81417	81380	82946	77819	81483	Continuing	Continuing
0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	11447	0	0	0	0	0	0	0	0	11447

A. Mission Description and Budget Activity Justification: 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 (049), 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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2005

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) 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 2005

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 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

	COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	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	44612	36434	81425	81417	81380	82946	77819	81483	Continuing	Continuing
AT6	ANTI-TERRORISM (RDT&E MGT SUPPORT)	443	412	0	0	0	0	0	0	0	855
CM6	HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1525	1352	1557	1558	0	0	0	0	0	5992
DT6	JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	5753	2953	4005	4015	4012	4017	4021	4029	Continuing	Continuing
DW6	MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	15840	14326	55010	55571	55919	55258	53478	56752	Continuing	Continuing
MS6	RDT&E MGT SUPPORT	18212	14868	17939	17359	18067	20185	16600	16672	Continuing	Continuing
O49	JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&	2839	2523	2914	2914	3382	3486	3720	4030	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 2005
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 February 2005
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.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **February 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)

B. Program Change Summary:	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2005 PB)	38928	42652	47333	45013
Current Biennial Budget Estimates (FY 2006)	44612	36434	81425	81417
Total Adjustments	5684	-6218	34092	36404
a. Congressional General Reductions	0	-5882	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	-20	0	0	0
d. SBIR/STTR Transfer	0	0	0	0
e. Other Adjustments	5704	-336	34092	36404

Change Summary Explanation:

Funding: FY04 - Provide program management support for the DoD CBDP (+$5,704K MS6). Reprogrammings to other CBDP programs (-$20K)

FY05 - Congressional reduction (-$55K AT6; -$184K CM6; -$401K DT6; -$1,947K DW6; -$2,069K MS6; -$344K O49). Congressional general reductions (-$9K AT6; -$32K CM6; -$70K DT6; -$342K DW6; -$371K MS6; -$58K O49). Realign funds to support civilian end strength in the Joint Requirements Office (-$336K MS6).

FY06 - Realign funding to the test and evaluation programs to comply with the FY2003 National Defense Authorization Act (NDAA) direction (+$10,080K DW6). Upgrade test and evaluation facilities (+$25,000K DW6; +$1,000K MS6). Reduce planned contracting support (-$608K). Realign funds to support civilian end strength in the Joint Requirements Office (-$696K MS6).

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA6 - RDT&E Mgt Support**	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)**

Funding (cont.)

FY07 - Realign funding to the test and evaluation programs to comply with the FY2003 National Defense Authorization Act (NDAA) direction (+$11,660K DW6). Upgrade test and evaluation facilities (+$25,000K DW6; +$1,000K MS6). Reduce planned contracting support (-$558K). Realign funds to support civilian end strength in the Joint Requirements Office (-$720K MS6).

Schedule: N/A

Technical: N/A

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

DATE **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	443	412	0	0	0	0	0	0	0	855

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 2004	FY 2005	FY 2006	FY 2007
FORCE PROTECTION	443	409	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) AT6**

FY 2004 Accomplishments:

- 443 Developed after action reports for participating installations. Refined fixed site facility biological detection concept of operations (CONOPS) to reduce life cycle costs.

Total 443

FY 2005 Planned Program:

- 409 Perform post exercise lessons learned for the Joint Service Installation Pilot Program (JSIPP) and perform analysis of standardized test requirements for first responder and civilian protection equipment.

Total 409

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	3	0	0

FY 2005 Planned Program:

- 3 SBIR

Total 3

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	1525	1352	1557	1558	0	0	0	0	0	5992

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 2004	FY 2005	FY 2006	FY 2007
WMD - CIVIL SUPPORT TEAMS	1525	1341	1557	1558

FY 2004 Accomplishments:

- 406 WMD CST- Engineering and Subject Matter Expert support to the ALS SEP Phase IV CST project.
- 287 WMD CST - Management and Subject Matter Expert support to the ALS Block I project.
- 544 WMD CST - Management and Subject Matter Expert support to the UCS Increment I project.
- 288 WMD CST - Program Management Support PM WMD CST.

Total 1525

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **CM6**

FY 2005 Planned Program:

- 286 WMD CST- Engineering and Subject Matter Expert support to the ALS SEP Phase IV CST project.
- 478 WMD CST - Management and Subject Matter Expert support to the ALS Block I project.
- 577 WMD CST - Program Management Support PM WMD CST.

Total 1341

FY 2006 Planned Program:

- 300 WMD CST- Engineering and Subject Matter Expert (SME) support to the ALS SEP Phase V CST project.
- 586 WMD CST - Management and Subject Matter Expert support to the ALS Block I project.
- 671 WMD CST - Program Management Support PM WMD CST.

Total 1557

FY 2007 Planned Program:

- 462 WMD CST - Management and Subject Matter Expert support to the ALS Block I project.
- 424 WMD CST - Assess technical and operational performance of COTS/GOTS/NDI equipment to be fielded via technical refreshment.
- 672 WMD CST - Program Management Support PM WMD CST.

Total 1558

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) CM6**

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	11	0	0

FY 2005 Planned Program:

- 11 SBIR

Total 11

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	5753	2953	4005	4015	4012	4017	4021	4029	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 2004	FY 2005	FY 2006	FY 2007
JOINT REQUIREMENTS OFFICE DOCTRINE AND TRAINING	5753	2929	4005	4015

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **DT6**

FY 2004 Accomplishments:

- 2764 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.
- 400 DT - Initiated the revision and development of the MTTP for CBRN Defense Operations. 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.
- 2489 DT - Continued analyses to define capability gaps, capability needs and approaches to provide those capabilities within CBRN defense across all DoD mission areas. Initiated 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 5753

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **DT6**

FY 2005 Planned Program:

- 1491 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.
- 680 DT - Continue 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. Continue to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 100 DT - Continue to support additional joint participation in the JSLC.
- 658 DT - Continue analyses to define capability gaps, capability needs and approaches to provide those capabilities within CBRN defense across all DoD mission areas. Continue execution of the Joint Enabling Concept for CBRN Defense experimentation strategy. Continue analyses to support the development of joint architectures, joint operational concepts, and supporting technical annexes. Continue development, coordination and integration of joint capability requirements.

Total 2929

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **DT6**

FY 2006 Planned Program:

- 2994 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 4005

FY 2007 Planned Program:

- 2891 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.

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

DATE: **February 2005**

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 (Cont):

- 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 4015

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	24	0	0

FY 2005 Planned Program:

- 24 SBIR

Total 24

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

DATE **February 2005**

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 2004 Actual	FY 2005 Estimate	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)	15840	14326	55010	55571	55919	55258	53478	56752	Continuing	Continuing

A. Mission Description and Budget Item Justification:

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 Major Range and Test Facility Bases (MRTFB). Increased funding, beginning in FY06 reflects the DoD leadership actions to comply with the Bob Stump National Defense Authorization Act (NDAA) for FY 2003 (Public Law 107-314 -- December 2002). In accordance with the NDAA, Sec 232, "The Secretary of Defense shall establish the objective of ensuring that, by FY2006 -- (1) the institutional and overhead costs of a facility or resource or a military department or Defense Agency that is within the Major Range and Test Facility Base are fully funded...'institutional and overhead costs'...means the costs of maintaining, operating, upgrading, and modernizing the facility or resource; and does not include any incremental cost of operating a facility or resource that is attributable to the use of the facility or resource for testing under a particular program." Prior to FY2006, customers partially reimbursed MRTFB institutional costs.

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.

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) DW6**

DPG uses state-of-the-art chemical and life sciences test facilities and test chambers to perform CB defense testing of protective gear, decontamination systems, detectors, and equipment while totally containing chemical agents and biological pathogens. DPG also provides a fully instrumented outdoor range capability for testing with simulants that can be correlated to the laboratory testing with live agents.

Projects programmed for testing at DPG include: Joint 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 2004	FY 2005	FY 2006	FY 2007
DUGWAY PROVING GROUND	15840	14208	55010	55571

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **DW6**

FY 2004 Accomplishments:

- 10062 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.
- 730 DPG, MRTFB - Partially supported DPGs CB test mission contractor labor costs. This was 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.
- 567 DPG, MRTFB - Provided for a dedicated and specially trained, 24-hour support staff, who operated and maintained all critical control systems, such as critically clean steam, highly complex heating ventilation, and air conditioning (HVAC) system, and decontamination systems, within DPGs Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.
- 4481 DPG, MRTFB - Provided for revitalization/upgrade and sustainment efforts at DPG commensurate with technology/facility requirements for future and current testing. Efforts included decontamination pad replacement chemical and biological simulant characterization, chemical and biological laboratory equipment, annual service contracts for equipment operation, diagnostics, and calibration, and purchases to upgrade/replace aging equipment and instrumentation.

Total 15840

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **DW6**

FY 2005 Planned Program:

- 10393 DPG, MRTFB - Partially supports DPGs civilian labor for CB test mission to 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. Supports a portion of the overhead costs of the civilian labor costs for Army Program Budget Guidance (PBG) authorizations. The balance is reimbursed from test customer funds.
- 700 DPG, MRTFB - Partially supports 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 is reimbursed from test customer funds.
- 595 DPG, MRTFB - Provides 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.
- 2520 DPG, MRTFB - Provides for revitalization/upgrade and sustainment efforts at DPG commensurate with technology/facility requirements for future and current testing. Planned efforts include: chemical protective mask test fixture upgrades, chamber agent monitoring methodology developments, Polymerase Chain Reaction analysis improvements, annual service contracts for equipment operation, diagnostics, and calibration, and purchases to upgrade/replace aging equipment and instrumentation.

Total 14208

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

DATE: **February 2005**

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:

- 34987 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

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

DATE: **February 2005**

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):

- 10703 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

Total 55010

FY 2007 Planned Program:

- 38066 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

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

DATE: **February 2005**

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):

- 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).
- 7479 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 increases beginning in FY06, put this MRTFB in compliance with the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 (Public Law 107-314 -- December 2002, Sec 232).

Total 55571

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	118	0	0

FY 2005 Planned Program:

- 118 SBIR

Total 118

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	18212	14868	17939	17359	18067	20185	16600	16672	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).

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **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 will support JPEO to plan and coordinate with the Operational Test Activities a series of methodology, instrumentation, and associated validation efforts to 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.

Test infrastructure and technology programs have been prioritized in accordance with the RDA Plan and the annual Nuclear, Biological, and Chemical (NBC) Joint Priority List (JPL) and the Joint Requirements Office Baseline Capabilities Assessment (BCA). Programs will be structured to phase highest priority efforts in time to support RDA Plan required tests and schedules to the fullest extent possible.

Test Operating Procedures (TOPs) will be developed to standardize and document new test procedures and/or 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.

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

DATE: February 2005

BUDGET ACTIVITY: RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support

PROJECT: 0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) MS6

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
CHEM BIO ARCHIVE INFORMATION MGT SYS	238	208	0	0

FY 2004 Accomplishments:

- 238 CBAIMS - Archive Chemical and Biological information from multiple service locations.

Total 238

FY 2005 Planned Program:

- 208 CBAIMS - Archive Chemical and Biological information from multiple service locations.

Total 208

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT REQUIREMENTS OFFICE (JRO) MANAGEMENT	2535	3630	3909	3293

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2004 Accomplishments:

- 2535 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; Joint Staff Combating WMD Enhanced Planning Process; DOD CBDP program guidance; DoD CBRND Program Objective Memorandum; Joint CBRND Concept; 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 2535

FY 2005 Planned Program:

- 3630 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 3630

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2006 Planned Program:

- 3909 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 3909

FY 2007 Planned Program:

- 3293 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 3293

	FY 2004	FY 2005	FY 2006	FY 2007
JOINT TEST INFRASTRUCTURE WORKING GROUP	1903	3742	5020	5032

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2004 Accomplishments:

- 1903 JTIWG - Developed initial requirements for Test and Evaluation (T&E) methodology development, test system instrumentation integration and integration, and test technology validation for refereeing agent simulant challenges for field testing (developmental and operational). Conducted yearly CBDP T&E Review and a series of work groups to define T&E capabilities needs and to resolve JPE acquisition T&E issues. Provided T&E segments to CBDP Annual Report and to POM and EPP processes, identified and prioritized infrastructure needs to meet milestone and fielding-decision timelines for CBD systems.

Total 1903

FY 2005 Planned Program:

- 3742 JTIWG - Establish 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. Support JPEO in planning programs to refine methodology for data fusion and visualization. Procure additional ground truth instrumentation and initiate mobile capability. Expand participation in system IPTs to plan and execute structured programs for acquisition of T&E capabilities. Provide input to JSCBIS, POM. and the annual CBDP Congressional Report. Support DOT&E in oversight of key CBDP systems. Support early involvement of Operational Testing Agencies in T&E programs, review test plans, test methodologies, and requirements documents. Support T&E Executive Project Officer.

Total 3742

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2006 Planned Program:

- 5020 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 5020

FY 2007 Planned Program:

- 5032 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 5032

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) MS6**

	FY 2004	FY 2005	FY 2006	FY 2007
OFFICE SECRETARY OF DEFENSE MGMT	9667	2837	4004	4015

FY 2004 Accomplishments:

- 9667 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; quarterly financial statements and annual audits; and execution reporting. Provided JSCBIS database support.

Total 9667

FY 2005 Planned Program:

- 2837 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. Provide JSCBIS database support.

Total 2837

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2006 Planned Program:

- 4004 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. Provide JSCBIS database support.

Total 4004

FY 2007 Planned Program:

- 4015 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. Provide JSCBIS database support.

Total 4015

	FY 2004	FY 2005	FY 2006	FY 2007
PROGRAM ANALYSIS AND INTEGRATION OFFICE (PAULO) MGT	3869	4326	5006	5019

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2004 Accomplishments:

- 3869 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 President's Budget (PB) submissions. Responded to specialized evaluation studies throughout the Planning, Programming, Budgeting and Execution (PPBE) process. Provided JSCBIS database management.

Total 3869

FY 2005 Planned Program:

- 4326 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 4326

FY 2006 Planned Program:

- 5006 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 5006

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **MS6**

FY 2007 Planned Program:

- 5019 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 5019

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	125	0	0

FY 2005 Planned Program:

- 125 SBIR

Total 125

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) O49**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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&	2839	2523	2914	2914	3382	3486	3720	4030	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project O49 JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&: 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 2004	FY 2005	FY 2006	FY 2007
JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM	2839	2502	2914	2914

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)** **O49**

FY 2004 Accomplishments:

- 1198 JCDE - Established the Joint Combat Developer (JCD) for CBRND at the U.S. Army Chemical School (USACMLS) to explore, develop and transition new technologies, concepts and organizational ideas that update and improve the Joint CBRND concept through work shops, studies, war games and limited objective experiments.
- 1000 JCDE - Initiated field tests to evaluate performance and procedures for processing cargo and personnel through an exchange zone (Phase IV).
- 500 JCDE - Initiated analysis of current procedures to identify risks, capability shortfalls, and provide recommendations to prevent CBRN contamination of military mail.
- 141 JCDE - Initiated laboratory and field tests to develop operational parameters and determine the impact of wind speed on aerosol penetration of the Joint Service Lightweight Integrated Suit Technology (JSLIST).

Total 2839

FY 2005 Planned Program:

- 2502 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 2502

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

DATE: **February 2005**

BUDGET ACTIVITY: **RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support**

PROJECT: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT) O49**

FY 2006 Planned Program:

- 2914 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 2914

FY 2007 Planned Program:

- 2914 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 2914

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	21	0	0

FY 2005 Planned Program:

- 21 SBIR

Total 21

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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	11447	0	0	0	0	0	0	0	0	11447
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	11447	0	0	0	0	0	0	0	0	11447

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

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

B. Program Change Summary:	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**
Previous President's Budget (FY 2005 PB)	0	0	0	0
Current Biennial Budget Estimates (FY 2006)	11447	0	0	0
Total Adjustments	11447	0	0	0
a. Congressional General Reductions	0	0	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	11447	0	0	0
e. Other Adjustments	0	0	0	0

Change Summary Explanation:

Funding: FY04 - Funding transferred and applied to SBIR program (+$11,447K SB6).

Schedule: N/A

Technical: N/A

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

DATE **February 2005**

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) **SB6**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	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)	11447	0	0	0	0	0	0	0	0	11447

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.

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

DATE: **February 2005**

BUDGET ACTIVITY	PROJECT
RDT&E DEFENSE-WIDE/ BA6 - RDT&E Mgt Support	**0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)** **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.

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

DATE
February 2005

BUDGET ACTIVITY
RDT&E DEFENSE-WIDE/
BA6 - RDT&E Mgt Support

PROJECT
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) **SB6**

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	11447	0	0	0

FY 2004 Accomplishments:

- 11447 ZSBIR - Small Business Innovative Research

Total 11447

BUDGET ACTIVITY 7
OPERATIONAL SYSTEMS DEVELOPMENT

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CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	2131	10093	8137	11084	19884	16986	22388	Continuing	Continuing
CA7	CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	2131	10093	8137	8134	8143	8148	8164	Continuing	Continuing
IP7	INDIVIDUAL PROTECTION OPERATIONAL SYS DEV	0	0	0	0	2950	11741	8838	14224	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides development efforts to upgrade systems in the Department of Defense (DoD) Chemical Biological Defense Program that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Efforts in this program element support the upgrade of fielded detectors against emerging chemical threat agents and toxic industrial chemicals.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **February 2005**

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 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005 PB)	0	2178	1944	0
Current Biennial Budget Estimates (FY 2006)	0	2131	10093	8137
Total Adjustments	0	-47	8149	8137
a. Congressional General Reductions	0	-47	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	0	0	0	0
e. Other Adjustments	0	0	8149	8137

Change Summary Explanation:

Funding: FY06 - Enhancements to provide for the modernization and upgrade of instrumentation and equipment in support of the CB test mission in the MRTFB (+$8,000K CA7). Inflation adjustment +$149K CA7).

FY07 - Enhancements to provide for the modernization and upgrade of instrumentation and equipment in support of the CB test mission in the MRTFB (+$8,000K CA7). Inflation adjustment +$137K CA7).

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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 2004 Actual	FY 2005 Estimate	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	0	2131	10093	8137	8134	8143	8148	8164	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.

Beginning in FY06, this project includes funding for Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB). Efforts provide for revitalization/upgrade of their facilities/infrastructure instrumentation to support their chemical/biological (CB) test mission.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
DETECTOR MODS	0	2114	1973	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2005 Planned Program:

- 2114 DETECTMOD - Initiate evaluations of existing and fielded NBC detectors to detect emerging and changing threats.

Total 2114

FY 2006 Planned Program:

- 1973 DETECTMOD - Continue evaluations of existing and fielded NBC detectors to detect emerging and changing threats.

Total 1973

	FY 2004	FY 2005	FY 2006	FY 2007
T&E RANGE INSTRUMENTATION/TECHNOLOGY UPGRADE	0	0	8120	8137

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

DATE: February 2005

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.
- 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.

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

DATE: **February 2005**

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 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, and developing a deployable Polymerase Chain Reaction sampling system for use in the field testing of biological detection systems.
- 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.

Total 8120

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

DATE: February 2005

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:

- 2300 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, and developing a versatile, multi-configurable test chamber for the testing of single small items.
- 2300 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.

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

DATE: February 2005

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):

- 2300 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, and developing a deployable Polymerase Chain Reaction sampling system for use in the field testing of biological detection systems.
- 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.

Total 8137

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	17	0	0

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

DATE: **February 2005**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDT&E DEFENSE-WIDE/ BA7 - Operational Systems Development	**0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)**	**CA7**

FY 2005 Planned Program:

- 17 SBIR

Total 17

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

DETECTMOD — Efforts in the Detector Mods program support the upgrade of fielded detectors against emerging and changing chemical threat agents and Toxic Industrial Materials (TIMs). This will be a joint effort between the Research Development and Engineering Command (RDECOM) and the Joint Project Manager for Nuclear Biological Chemical Contamination Avoidance (JPM NBC CA).

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 - Government OT&E	MIPR	TBS	U	0	1525	2Q FY05	1360	2Q FY06	0	NONE	0	2885	0
T&E UPGRAD													
Dugway Proving Ground, UT	C/FP	TBD	U	0	0	NONE	8120	2Q FY06	8137	2Q FY07	0	16257	0
Subtotal III. Test and Evaluation:				0	1525		9480		8137		0	19142	

Remarks:

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE: **February 2005**

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 S - DETECTMOD - JPM NBC CA, RDECOM Support	MIPR	Various, APG, MD	U	0	589	2Q FY05	613	1Q FY06	0	NONE	0	1202	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	17	NONE	0	NONE	0	NONE	0	17	0
Subtotal IV. Management Services:				0	606		613		0		0	1219	

Remarks:

TOTAL PROJECT COST:	0	2131		10093		8137		0	20361	

Exhibit R-4a, Schedule Profile

DATE: **February 2005**

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																																
Evaluation / Technology Upgrades of Fielded Detectors					2Q											4Q																

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