

**DoD Joint Service  
Chemical/Biological Defense Program**

**RDT&E Descriptive Summaries for  
Fiscal Year (FY) 2005 Budget Estimates  
RDT&E, Defense-Wide**



**February 2004**

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**Fiscal Year (FY) 2005 Budget Estimates**

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## Department of Defense Chemical/Biological Defense Program Overview

### Fiscal Year (FY) 2005 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 "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 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 FY05, 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, Detection of CB Contamination on Surfaces, Self-Detoxifying Materials for CB Protective Clothing, Chemical and Biological Hazard Environment Prediction, advanced medical CB prophylaxes, smallpox therapeutics, and advanced decontamination capabilities.**

**In addition, OSD has submitted a prior approval reprogramming action to OMB that would transfer \$16.3M to Research, Development, Test, and Evaluation, Defense-Wide, 04/05, appropriation in FY04. If approved by Congress, this action would provide additional funding to the CBDP Budget Activity 3: Advanced Technology Development, PE 0603384BP, Chemical and Biological Defense Program - Advanced Development. This additional funding would enhance research efforts to develop defenses against chemical and biological agents that could threaten United States armed forces. Efforts would include improvements to chemical and biological agent detection and identification, decontamination, and individual/collective protection which would speed maturing of advanced technologies to U.S. forces. Efforts would also include the preclinical development of safe and effective prophylaxes and therapies (vaccines and drugs) for pre-and post-exposures to chemical and biological threat agents, advanced technology development of diagnostic devices to rapidly diagnose exposure to biological agents in clinical samples, and detection for new and novel threat agents. This funding will also support additional technology readiness assessments on technologies for consequence management that are transitioning from the applied research program. Examples of candidate technologies include decontamination solution formulations, standoff chemical detection, chemical-biological agent water monitoring, chemical point detectors with Toxic Industrial Chemical/Toxic Industrial Material/New Threat Agent capabilities, and biological agent identifiers and triggers.**

**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 FY05 include: Artemis and the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) for standoff chemical agent detection, the Joint Chemical Agent Detector (JCAD) for portable point chemical agent detection, the Joint Effects Model (JEM) and the Joint Operational Effects Federation (JOEF) to provide risk management tools to the warfighter Advanced Concept Technology Demonstrations (ACTDs) to demonstrate CB defense capabilities at fixed sites (Contamination Avoidance at Sea Ports of Debarkation), Joint Service Family of Decontamination Systems (JSFDS), Joint Service Sensitive Equipment Decontamination (JSSED), Advanced Anti-Convulsants, biological defense vaccines (including recombinant botulinal toxin vaccine and recombinant plague vaccine) as part of the Joint Vaccine Acquisition Program (JVAP), the Critical Reagents Program (CRP) to support development of reagents for biological detection and diagnostic systems, the Joint Biological Point Detection System (JBPDS), the Joint Biological Standoff Detection System (JBSDS), the Joint Biological Agent Identification and Diagnostic System (JBAIDS), the Joint Warning and Reporting Network (JWARN), Joint Collective Protection Equipment (JCPE), Joint Protective Aircrew Ensemble (JPACE), Joint Service Aircrew Mask (JSAM), and the Joint Service General Purpose Mask (JSGPM).**

**In FY05, 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 FY05 include Joint Effects Model (JEM) and Joint Protective Aircrew Ensemble (JPACE). Continuing procurement includes the JSGPM, JWARN, JBAIDS, Joint Service Mask Leakage Tester (JSMLT), Joint Service Lightweight Integrated Suit Technology (JSLIST), the NBC Reconnaissance Vehicle (NBCRV), Joint Service Lightweight NBC Reconnaissance System (JSLNBCRS), JCAD, JSLSCAD, JBPDS, biological defense vaccines (Anthrax Vaccine Adsorbed), and Joint Collective Protective Equipment (JCPE).**

**In addition to efforts described above, the CBDP has significantly strengthened efforts for improving DoD Installation Force Protection against CB threats. DoD has programmed resources to address 200 installations from FY04-FY09. The FY05 increment to support additional procurement of CB defense equipment for force installation protection is \$91 million.**

**The FY05 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.**

**There have been two significant changes in the management and oversight of the CBDP over the past year to provide a more streamlined and efficient structure. These changes are: (1) the establishment of the Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear (JRO-CBRN) Defense, and (2) the establishment of the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD). Some of the key features of the reorganization include: (1) transferring the requirements generation process to a single office within the Office of the Joint Chiefs of Staff (that is, JRO-CBRN Defense); (2) establishing the Under Secretary of Defense for Acquisition, Technology, and Logistics, USD(AT&L), as the single Milestone Decision Authority (MDA) for the CBDP; (3) establishing the JPEO-CBD to provide centralized program management and Joint Service acquisition program integration for all delegated non-medical and medical CB defense programs; and (4) transferring of the management of science and technology base programs to the Defense Threat Reduction Agency (DTRA).**



**Overall, the FY 2005 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 program supports our commitment to ensure full dimensional protection for all our fighting men and women operating at home and abroad under the threat of chemical and biological weapons. All of these capabilities are integrated as a family-of-systems essential to avoid contamination and to sustain operational tempo on an asymmetric battlefield, as well as satisfy emerging requirements for force protection and consequence management. In summary, the DoD CBDP remains committed to establishing the optimal balance between the near term requirement to field modernized equipment to the field, and the need to protect and replenish our long term investment in technology.**

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**Chemical and Biological Defense Program  
Fiscal Year (FY) 2005 Program, Budget Execution Review**

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

**Date: February 2004**

Thousands of Dollars						
Line No	Program Number	Item	Budget Activity	FY 2003	FY 2004	FY 2005
008	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	53,162	51,380	36,769
		<b>Basic Research</b>		<b>53,162</b>	<b>51,380</b>	<b>36,769</b>
015	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	170,183	151,372	104,385
		<b>Applied Research</b>		<b>170,183</b>	<b>151,372</b>	<b>104,385</b>
033	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	3	105,700	156,496	117,343
		<b>Advanced Technology Development (ATD)</b>		<b>105,700</b>	<b>156,496</b>	<b>117,343</b>
069	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	4	91,567	131,433	104,195
		<b>Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>91,567</b>	<b>131,433</b>	<b>104,195</b>
082	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (SDD)	5	168,723	176,337	152,379
		<b>System Development and Demonstration (SDD)</b>		<b>168,723</b>	<b>176,337</b>	<b>152,379</b>
120	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	6	39,408	38,928	42,652
120	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	9,270	0	0
		<b>RDT&amp;E Mgt Support</b>		<b>48,678</b>	<b>38,928</b>	<b>42,652</b>
142	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	7	0	0	2,178
		<b>Operational Systems Development</b>		<b>0</b>	<b>0</b>	<b>2,178</b>
<b>Total Chemical and Biological Defense Program</b>				<b>638,013</b>	<b>705,946</b>	<b>559,901</b>

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**BUDGET ACTIVITY 1**  
**BASIC RESEARCH**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Program Element (PE) Cost	53162	51380	36769	37839	40913	43835	42399	Continuing	Continuing
CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	14421	12797	6413	7580	10454	10614	10833	Continuing	Continuing
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	30705	29309	20728	19647	19776	22375	20495	Continuing	Continuing
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	8036	9274	9628	10612	10683	10846	11071	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 non-medical). 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 a lethal, 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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	
<p>Research areas are determined 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 academia, including Historically Black Colleges and Universities and Minority Institutions (HBCU/MIs), and government research laboratories. 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 Joint Service Nuclear, Biological, and Chemical (NBC) Defense 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.</p>		
Line No: 008	Page 2 of 31 Pages	Exhibit R-2 (PE 0601384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC                  RESEARCH)</b>
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<b>B. <u>Program Change Summary:</u></b>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget (FY 2004 PB)		54829	35831	36769
Current Biennial Budget Estimates (FY 2005)		53162	51380	36769
Total Adjustments		-1667	15549	0
a. Congressional General Reductions		0	-551	0
b. Congressional Increases		0	16100	0
c. Reprogrammings		-886	0	0
d. SBIR/STTR Transfer		-797	0	0
e. Other Adjustments		-89	0	0

**Change Summary Explanation:**

**Funding:**    FY04 - Congressional adjustment for CBD (+\$6,600K CB1; +\$9,500K TB1).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	14421	12797	6413	7580	10454	10614	10833	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; and information on the chemistry and toxicology of threat agents and related materials.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	6912	3991	3412

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>

**FY 2003 Accomplishments:**

- 1870 Biological Agent Identification Detection - Initiated experimental apparatus to evaluate a novel optical signature called Polarization Opposition Effect (POE) for use as a bacterial spore particle (aerosol) discriminator. Initiated synthesis of candidate stochastic sensor elements based on biotinylated oligosaccharides; initiated screening testing. Completed validation of experimental apparatus. Demonstrated optical separation of similar bacterial species. Initiated investigations of micro-channel mixing via configurable heating and surfaces.
- 666 Chemical Stand-off Detection - Initiated investigations of the applicability of new techniques to the analysis of hyperspectral Fourier transform infrared data. Initiated investigations of a novel two-photon fluorescence spectroscopy method and potential applicability to stand-off CB detection.
- 1006 Integrated CB Detection - Initiated proof of principle investigations of novel materials for selective interactions with CW agent simulants in conjunction with optical (liquid crystal) amplification to enhance detection. Continued investigations of surface modified gold nanoclusters for detection of CW agents.
- 3370 Detection of Chemical and Biological Pollutant Agents in Water - Initiated development of advanced wide bandgap piezoelectric semiconductors and micro machined sensing structures. Initiated development of and immobilized phages/antibodies as specific sensing elements. Initiated evaluation of test bed sensors for real time detection.

**Total** 6912

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2449 Biological Agent Identification Detection - Complete proof of principle experimentation; complete theoretical correlations to experimental data for POE. Continue synthesis of candidate stochastic sensor elements; continue screening testing. Demonstrate proof of principle for separation of BW agent surrogates. Complete initial investigations of the relationships between physical-chemical properties and optical separation of biological agent simulants. Continue investigations of micro-channel mixing via configurable heating and surfaces by comparison of data and model prediction. Initiate investigations of antimicrobial peptides for applicability as bio-detection elements; initiate testing program. Initiate effort to characterize polymorphic regions of B. mallei genome using ribotyping, repetitive sequence polymerase chain reaction, and Randomly Amplified Polymorphic DNAs.</li> <li>• 320 Chemical Stand-off Detection - Complete investigations of the applicability of new techniques to the analysis and processing hyperspectral Fourier Transform Infrared data. Complete investigations of novel two-photon fluorescence spectroscopy method and potential applicability to stand-off CB detection. Transition to BA2 as appropriate.</li> <li>• 1222 Integrated CB Detection - Complete proof of principle investigations of novel materials for selective interactions with CW agent simulants in conjunction with optical amplification to enhance detection. Complete investigations of surface modified gold nanoclusters for detection of CW agents. Initiate investigations of modified nanofilaments for detection of CB warfare agents.</li> </ul> <p><b>Total</b>    3991</p>		
Project CB1/Line No: 008	Page 6 of 31 Pages	Exhibit R-2a (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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**FY 2005 Planned Program:**

- 2344 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.
- 1068 Integrated CB Detection - Complete investigation of modified nanoelectrodes for the detection of CB agents. Initiate novel approaches for improved CB detection as appropriate.

**Total** 3412

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	1499	663	630

**FY 2003 Accomplishments:**

- 300 Respiratory Protection - Initiated theoretical and empirical studies related to the physical and chemical interactions of vapors with surfaces.
- 235 Individual Protection (Clothing) - Initiated use of patterned electrospray of nanofibers to enhance particulate protection. Continued investigations of surface-modified membranes and measurement of differential permeation rates for chemical vapors and water vapor.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 964 Chemical Warfare Protection Research Project - Purchased a state-of-the-art mass spectrometer. The sensitive instrument was used to accurately identify minute quantities of biomarkers from exposures to nerve agents, as well as biomarkers of other organophosphates that inhibit nerve signal transmission. Until recently, the only biomarkers indicating exposure to nerve agents are enzymes known as cholinesterases. However, recent research indicates certain proteins also react with nerve agents. Research on the proteins and their respective mechanisms could lead to an improved prophylaxis for nerve agents.</li> </ul> <p><b>Total</b> 1499</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 269 Individual Protection (Clothing) - Evaluate effectiveness of nanofiber-coated fabrics for protection against particulate materials. Complete investigations of surface modified membranes.</li> <li>• 172 Respiratory Protection - Complete theoretical and empirical investigations of the mechanisms of interactions of vapors with active surfaces.</li> <li>• 222 Shelter Protection - Initiate investigations of the interrelationships between the chemical, physical, and transport properties of novel butyl rubber membranes prepared by electrospinning.</li> </ul> <p><b>Total</b> 663</p>		
Project CB1/Line No: 008	Page 8 of 31 Pages	Exhibit R-2a (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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**FY 2005 Planned Program:**

- 330 Shelter Protection - Continue investigations of the interrelationships between the chemical, physical, and transport properties of novel butyl rubber membranes prepared by electrospinning.
- 300 Respiratory Protection - Initiate research into understanding physical adsorption processes for toxic industrial chemicals and CW agents on novel adsorbent materials.

**Total** 630

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	4699	1125	1567

**FY 2003 Accomplishments:**

- 1150 Solution Decontamination - Initiated investigations of and developed methodology for determination of the chemical structure semi-solid materials with absorbed CB agents. Initiated studies of the decontamination mechanism of secondary catalytic oxidants generated by the addition of monovalent salts to a peracid-dioxirane. Initiated investigations of the efficacy of artificial nucleases for anti-bacterial and anti-viral activity. Initiated investigations of the utility of high-field Nuclear Magnetic Resonance (NMR) methodology in conjunction with tandem mass spectrometry to determine structures of biologically derived toxins. Continued investigations of chemical strategies designed for fast dissolution and deactivation/destruction of CW agents rapidly in organic nanoemulsions.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 180 Sensitive Equipment Decontamination - Initiated investigation of efficacy of vaporous dimethyl dioxirane for decontamination of BW agents.</li> <li>• 3369 Nanoemulsions for Decontamination - Developed and validated the efficacy of nanoemulsions for the purpose of decontaminating biological threat agents. The nanoemulsion can be formulated into a cream, liquid, or spray.</li> </ul> <p><b>Total 4699</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 900 Solution Decontamination - Complete feasibility studies for determination of semi-solid materials chemical composition with absorbed CB agents. Complete studies of the decontamination mechanism of secondary catalytic oxidants generated by the addition of monovalent salts to a peracid-dioxirane. Complete investigations of the efficacy of artificial nucleases for anti-bacterial and anti-viral activity. Complete investigations of the utility of high-field NMR methodology in conjunction with tandem mass spectrometry to determine structures of biologically derived toxins. Complete investigations of chemical strategies designed for dissolution and deactivation/destruction of CW agents rapidly in organic nanoemulsions.</li> <li>• 225 Sensitive Equipment Decontamination - Complete investigation of efficacy of vaporous dimethyl dioxirane for decontamination of BW agents.</li> </ul> <p><b>Total 1125</b></p>		
Project CB1/Line No: 008	Page 10 of 31 Pages	Exhibit R-2a (PE 0601384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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**FY 2005 Planned Program:**

- 1567 Decontamination - Initiate novel research efforts with potential for advanced agent decontamination capability.

**Total** 1567

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Supporting Science and Technology	350	275	352

**FY 2003 Accomplishments:**

- 350 Chemical Threat Agents - Investigated simulant volatility in humidified air.

**Total** 350

**FY 2004 Planned Program:**

- 275 Chemical Threat Agents - Investigate CW agents volatility in humidified air.

**Total** 275

**FY 2005 Planned Program:**

- 352 Chemical Threat Agents - Continue investigations of thickened CW agent volatility in humidified air.

**Total** 352

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Systems Technology	961	0	452

**FY 2003 Accomplishments:**

- 961 Agroterrorist Attack Response - Studied simulated response to a virus introduced into livestock.

**Total** 961

**FY 2005 Planned Program:**

- 452 Information Systems Technology - Initiate basic research effort(s) in support of information systems technology.

**Total** 452

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Basic Research	0	6527	0

**FY 2004 Planned Program:**

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

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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**FY 2004 Planned Program (Cont):**

- 1089 Advanced Sensor Design and Threat Detection Facility - Develop sensors and sensory materials that can identify and remediate threats to national security as well as public health.
- 1484 Detection of Biological Agents in Water - Investigate technologies for the detection of biological agents in potable water sources.
- 989 Biodetection Research - Investigate technologies for biodetection.

**Total** 6527

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	216	0

**FY 2004 Planned Program:**

- 216 SBIR - Small Business Innovative Research

**Total** 216

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104232	81482	63494	66321	52802	49219	50237	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	46712	93505	40527	25836	30838	31309	31957	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	10815	4208	5257	4563	4114	3194	3259	Cont	Cont

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	30705	29309	20728	19647	19776	22375	20495	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 (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines) and directed research efforts.

**B. Accomplishments/Planned Program**

	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
Therapeutics	16187	8835	9411

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>

**FY 2003 Accomplishments:**

- 979 Therapeutics, Bacterial - Correlated metabolic measurements as a rapid and sensitive means to detect antibiotic activity with conventional susceptibility determinations and appropriate animal models of infection. Established collaborative research and development agreements with pharmaceutical companies to test new and investigational antibiotics. Initiated evaluation of selected therapeutic compounds against Brucella.
- 4786 Therapeutics, Toxin - Identified novel human and chimeric monoclonal antibodies by phage display methodology to aid in determining potential as botulinum neurotoxin therapeutics. Performed custom synthesis of lead compounds identified by high-throughput screening assays for botulinum neurotoxin and staphylococcal enterotoxins (SE). Co-crystallized toxin and lead therapeutics and collected x-ray diffraction datasets. Supported development of combinatorial libraries and diversity sets for potential toxin therapeutics.
- 2055 Therapeutics, Viral - Initiated development of intervention strategies for filovirus-induced shock and therapeutic approaches that combine antiviral and anti-shock drug therapy. Further characterized the innate immune response in mice, which indicated that a subset of cytokines can protect mice from lethal Ebola virus challenge. Continued research for development of in vitro assays utilizing filovirus polymerase as a potential antiviral drug target. Developed an assay for high-throughput interaction between Ebola virus proteins (VP40 and TSG101). Completed sequencing of Marburg and Ebola virus strains and isolates.

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

**FY 2003 Accomplishments (Cont):**

- 5000 Therapeutics, Anthrax Studies - Continued extramural research efforts toward the development and testing of new approaches for the treatment of inhalational anthrax. Focus continued on two classes of compounds that inhibit the activity of the lethal toxin produced during anthrax infection and on the enzyme target nicotinamide adenine dinucleotide (NAD), which is critical for the germination and vegetative life cycle of Bacillus anthracis, the etiologic agent for anthrax.
- 3367 Therapeutics, Toxin, Bioprocessing Facility - Developed a detailed design for the construction of a current Good Manufacturing Practice (cGMP) compliant facility capable of producing human monoclonal antibodies (MAbs) to botulinum neurotoxins (BoNT) for use in phase I clinical trials.

**Total** 16187

**FY 2004 Planned Program:**

- 1208 Therapeutics, Bacterial - Evaluate novel lead antimicrobial compounds in small animal models for anthrax and plague.
- 5211 Therapeutics, Toxin - Continue custom synthesis of structural analogs of lead compounds identified by high-throughput screening assays for botulinum and SE toxins. Refine x-ray data for toxin-inhibitor co-crystal structures of most promising botulinum neurotoxin and SE inhibitors. Perform computational chemistry studies to refine lead compound co-crystal structures.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
<b>FY 2004 Planned Program (Cont):</b>		
<ul style="list-style-type: none"> <li>• 2416 Therapeutics, Viral - Continue research for development of intervention strategies for filovirus-induced shock and therapeutic approaches that combine antiviral and anti-shock drug therapy. Complete research for development of in vitro assays utilizing filovirus polymerase as a potential antiviral drug target. Generate baculovirus-expressed Ebola virus proteins for use in research studies. Identify sequences within Ebola virus genes that are highly susceptible to short interfering RNA-mediated degradation.</li> </ul>		
<b>Total</b> 8835		
<b>FY 2005 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 1287 Therapeutics, Bacterial - Perform expanded in vivo studies on novel antimicrobial compounds against validated biological warfare threat agents.</li> <li>• 5551 Therapeutics, Toxin - Evaluate experimental neuronal drug delivery systems for lead botulinum neurotoxin treatment modalities in vitro and ex vivo. Explore theoretical feasibility of a single therapeutic to target multiple botulinum neurotoxin serotypes.</li> <li>• 2573 Therapeutics, Viral - Continue research for development of intervention strategies for filovirus-induced shock and therapeutic approaches that combine antiviral and anti-shock drug therapy. Test antiviral compounds in rodent models. Utilize in vitro assays based on filovirus polymerase to screen potential antiviral drugs. Screen functional knockout libraries with virus-like particles and live virus to identify pathogenicity determining factors. Engineer heterologous viruses to express Ebola virus-specific short interfering RNAs and assess their ability to inhibit Ebola virus replication in tissue culture.</li> </ul>		
<b>Total</b> 9411		
<div style="display: flex; justify-content: space-between;"> <span>Project TB1/Line No: 008</span> <span>Page 18 of 31 Pages</span> <span>Exhibit R-2a (PE 0601384BP)</span> </div>		



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vaccines	5655	11323	7267

**FY 2003 Accomplishments:**

- 2771 Vaccines, Bacterial - Developed mutations in various biological agents for in vivo expressed genes to examine role in virulence. Characterized the mechanism(s) of vaccine resistance in selected strains of various biological agents. Determined mechanisms and correlates of protection with efficacious Burkholderia mallei vaccines. Evaluated differences in the course of Brucella infection in different mouse strains. Tested multiagent vaccine constructs for immunogenicity in animal models.
- 924 Vaccines, Toxin - Compared the efficacy of constructs with neutralizing epitopes in other domains of botulinum neurotoxin serotypes with the current heavy chain (Hc) subunit toxin vaccine candidates.
- 1960 Vaccines, Viral - Completed investigating poxvirus immunity to determine the feasibility of replacing vaccinia immune globulin (VIG) with monoclonal antibodies and for constructing a new vaccine to replace the vaccinia virus vaccine for smallpox. Investigated the role of cytotoxic T cells in the Ebola virus-mouse model.

**Total** 5655

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<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3554 Vaccines, Bacterial - Continue studies on the molecular mechanisms of pathogenesis of selected BW threat agents. Identify additional virulence determinants of Brucella species. Initiate a study to identify and characterize novel virulence proteins of F. tularensis.</li> <li>• 1701 Vaccines, Toxin - Conduct computational chemistry studies to develop next generation botulinum neurotoxin and recombinant ricin toxin A-chain (rRTA) vaccines. Evaluate theoretical feasibility of multivalent vaccines by protein engineering. Evaluate the role of glycosylation or other structural modifications in reducing efficacy of botulinum neurotoxin vaccines.</li> <li>• 1701 Vaccines, Viral - Complete investigating the role of cytotoxic T cells in the Ebola virus-mouse model. Examine the use of virus-like particles (VLP) as antigen for vaccines for filoviruses. Initiate research to investigate the role of cytotoxic T cells in the filovirus model in non-human primates.</li> <li>• 3396 Vaccines, Plant Vaccine Development - Develop plant-based subunit vaccines as countermeasures against biological warfare agents.</li> <li>• 971 Vaccines, Plant Derived Vaccine Against Anthrax and Smallpox - Develop plant-based subunit vaccines against anthrax and smallpox as countermeasures against agents of biological warfare. Express both proposed vaccines in edible plants using a constitutive expression system based on transgenic plants. Express 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. Evaluate immunogenicity of plant-based vaccines in animal models.</li> </ul> <p><b>Total 11323</b></p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
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**FY 2005 Planned Program:**

- 3645 Vaccines, Bacterial - Continue to characterize novel virulence genes and gene products of selected bacterial threat agents to support discovery of new medical countermeasures.
- 1811 Vaccines, Toxin - Clone and express chimeric constructs to evaluate practical feasibility of multivalent toxin vaccines by protein engineering.
- 1811 Vaccines, Viral - Continue investigating the role of cytotoxic T cells in the higher animal model of filovirus infection. Continue development of animal models of aerosol infection with filoviruses. Continue evaluation of the use of virus-like particles (VLP) as antigens for vaccines for filoviruses.

**Total** 7267

	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
Diagnostics	4051	3803	4050

**FY 2003 Accomplishments:**

- 4051 Diagnostic Technologies - Conducted basic research on new diagnostic approaches to the early recognition of infection; developed reagents and associated assays to aid in identifying new host and agent-specific biological markers that can be used for early recognition of infection. Continued research to develop, evaluate, and explore new technological approaches for diagnosis of potential biological warfare threat agents and for concentrating and processing clinical samples to support rapid identification and diagnostics.

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<p><b>FY 2003 Accomplishments (Cont):</b>  <b>Total 4051</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3803 Diagnostic Technologies - Continue basic research on new diagnostic approaches to the early recognition of infection focusing on technologies compatible with future comprehensive integrated diagnostic systems. Continue to develop reagents and assays for appropriate biological markers for early recognition of infection and identify new host and agent-specific biological markers. Continue research directed toward new technological approaches for diagnosis of biological threat agents and new sample processing technologies.</li> </ul> <p><b>Total 3803</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4050 Diagnostic Technologies - Continue research on diagnostic approaches for early recognition of infections compatible with future comprehensive integrated diagnostic systems; continue to develop and identify new host and agent-specific biological markers that can be used for early recognition of infection. Continue research directed toward new technological approaches for diagnosis of biological threat agents and toward concentrating and processing clinical samples to support rapid diagnostics.</li> </ul> <p><b>Total 4050</b></p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Medical Biological Warfare Defense	4812	4851	0

**FY 2003 Accomplishments:**

- 4812 Medical Biological Warfare Defense, Engineered Pathogen Identification and Countermeasures Program - Identified the impact of biowarfare pathogens on the human body using computer models and direct protein analysis. Developed 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** 4812

**FY 2004 Planned Program:**

- 4851 Medical Biological Warfare Defense, Engineered Pathogen Identification and Countermeasures Program (Bug to Drug) - Identify the impact of biowarfare pathogens on the human body using computer models and direct protein analysis. Continue 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** 4851

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	497	0

**FY 2004 Planned Program:**

- 497 SBIR - Small Business Innovative Research

**Total**    497

**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	47183	47747	22622	15371	15658	16431	13113	Cont	Cont
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34677	45944	55621	39416	39440	42499	38625	Cont	Cont

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	8036	9274	9628	10612	10683	10846	11071	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 (Nerve Agent Defense, Vesicant Agent Defense and Chemical Warfare Agent (CWA) Defense) and directed research efforts (Low Level CWA Exposure and Non-Traditional Agents).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Nerve Agent Defense	1311	410	850

**FY 2003 Accomplishments:**

- 295 Nerve Agent Defense, Nerve Agent Anticonvulsants - Evaluated antidotes representing new strategies to address medical countermeasure requirements against conventional and emerging agents.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
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**FY 2003 Accomplishments (Cont):**

- 623 Nerve Agent Defense, Biological Scavengers - Expressed and purified a recombinant human carboxylesterase for crystallization. Evaluated circulatory stability of recombinant bioscavengers.
- 393 Nerve Agent Defense, Neuroprotection - Evaluated combination therapies for neuroprotection efficacy. Developed neurobehavioral assessment necessary to evaluate efficacy of neuroprotective therapies.

**Total** 1311

**FY 2004 Planned Program:**

- 410 Nerve Agent Defense, Neuroprotection - Evaluate drug treatment strategies and combinations of therapies for nerve agent-induced seizures.

**Total** 410

**FY 2005 Planned Program:**

- 850 Nerve Agent Defense, Neuroprotection - Continue to evaluate drug treatment strategies and combinations of therapies for nerve agent-induced seizures.

**Total** 850

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vesicant Agent Defense	1959	3542	4078



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
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**FY 2003 Accomplishments:**

- 1959 Vesicant Agent Defense, Vesicant Medical Countermeasures - Targeted mechanism of vesicant injury and explored intervention of pro-inflammatory mediators and calcium modulators. Conducted proteomic analysis of sulfur mustard toxicity.

**Total** 1959

**FY 2004 Planned Program:**

- 3542 Vesicant Agent Defense, Vesicant Medical Countermeasures - Identify mechanism of action of vesicant pretreatment compounds. Determine effects of sulfur mustard (HD) on cell structure using multiphoton laser scanning microscopy. Analyze in vitro effects of HD on cellular energy metabolism. Study in vitro biochemical changes induced by HD.

**Total** 3542

**FY 2005 Planned Program:**

- 4078 Vesicant Agent Defense, Vesicant Medical Countermeasures - Explore purification and delivery strategies of vesicant pretreatments. Continue to analyze in vitro effects of HD on cellular energy metabolism. Continue to study in vitro biochemical changes induced by HD.

**Total** 4078

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Chemical Warfare Agent Defense	4766	5165	4700

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>

**FY 2003 Accomplishments:**

- 274 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Investigated efficacy of sulfur donors as anti-cyanide pretreatments. Developed animal model to test cyanide pretreatment compounds.
- 197 Chemical Warfare Agent Defense, Inhalation Therapeutics - Assessed respiratory dynamics and lung biochemical function in male and female guinea pigs following exposure to chemical warfare agents.
- 295 Chemical Warfare Agent Defense, Medical Diagnostics - Incorporated biomarker panels into screening modules. Conducted electrophysiological analysis of chemical warfare agents (CWAs) in cultured cells. Analyzed central nervous system (CNS) and peripheral protein production following soman exposure. Developed new assays for HD adducts in plasma and for diagnosing cyanide exposure.
- 4000 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Investigated alterations in muscle physiology due to repetitive low dose CWA exposure. Characterized ultrastructural morphology, immunochemistry, and gene expression following low level chemical exposure. Studied the effects of low level chemical exposure on extracellular neurotransmitter levels. Evaluated organophosphate anhydrolase enzyme for potential use as a biomarker to confirm low level chemical exposure.

**Total** 4766

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

**FY 2004 Planned Program:**

- 1800 Chemical Warfare Agent Defense, Inhalation Therapeutics - Investigate enzymatic targets of HD. Conduct a dose-response assessment of early acute lung injury in rodents administered intravascular HD. Determine the biochemical effects in male and female guinea pigs following exposure to chemical warfare agents.
- 265 Chemical Warfare Agent Defense, Medical Diagnostics - Identify molecular intracellular proteomic changes following HD exposure.
- 2000 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Identify biomarker(s) to indicate low level chemical exposure. Continue studies of neurotoxic effects of low dose chemical agent exposure. Examine potential for immunological deficits following nerve agent exposures. Identify potential medical countermeasures for low level chemical warfare nerve agent and HD exposure.
- 1100 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Investigate changes to pulmonary airway resistance and permeability of pulmonary microvessels induced by exposure to various concentrations of platelet activating factor (PAF). Identify 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**    5165

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
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**FY 2005 Planned Program:**

- 2000 Chemical Warfare Agent Defense, Inhalation Therapeutics - Identify intervention targets to acute lung injury caused by CWAs. Continue dose-response assessment of any acute lung injury in rodents administered intravascular CWAs. Conduct histopathology studies in male and female guinea pigs following exposure to CWAs.
- 1000 Chemical Warfare Agent Defense, Low Level Chemical Warfare Agent Exposure - Examine multiple biomarkers as confirmatory for low level chemical exposure. Continue studies of possible immunological deficit following low level chemical nerve agent exposure. Examine physiological parameters that may alter sensitivity to low level CWAs. Continue to identify potential medical countermeasures for low level CWA exposures.
- 200 Chemical Warfare Agent Defense, Medical Diagnostics - Pursue development of a nanodevice for diagnosing CWA exposure using synthetic modeling and molecular imprinting.
- 1500 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Compare the direct effects of PAF on smooth muscle, hematic constituents, and lung to determine role in toxicity. Continue to identify changes in the global gene expression profile of cultured HEK exposed to NTAs using DNA microarrays and genomic techniques to aid in considering strategies leading to medical countermeasures.

**Total** 4700

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	157	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
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**FY 2004 Planned Program:**

- 157 SBIR - Small Business Innovative Research

**Total 157**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	18768	22143	18269	19936	20059	20354	21779	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	11197	11045	13489	12534	12615	12808	13075	Cont	Cont

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Exhibit R-2a (PE 0601384BP)

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# **BUDGET ACTIVITY 2**

## **APPLIED RESEARCH**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Program Element (PE) Cost	170183	151372	104385	101628	88519	86004	85129	Continuing	Continuing
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104232	81482	63494	66321	52802	49219	50237	Continuing	Continuing
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	47183	47747	22622	15371	15658	16431	13113	Continuing	Continuing
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	18768	22143	18269	19936	20059	20354	21779	Continuing	Continuing

<p>Line No: 015</p> <p align="center">Page 1 of 64 Pages</p> <p align="right">Exhibit R-2 (PE 0602384BP)</p>
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> 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, pretreatment, and therapeutic drugs, and on casualty diagnosis, patient decontamination, and medical management. In the non-medical area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection systems. This program also provides for conduct of 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 Joint Service NBC Defense Research, Development, and Acquisition (RDA) Plan. Efforts under this PE transition to and 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.</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>
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<b>B. <u>Program Change Summary:</u></b>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget (FY 2004 PB)		173362	106451	104385
Current Biennial Budget Estimates (FY 2005)		170183	151372	104385
Total Adjustments		-3179	44921	0
a. Congressional General Reductions		0	-1629	0
b. Congressional Increases		0	46550	0
c. Reprogrammings		-347	0	0
d. SBIR/STTR Transfer		-2542	0	0
e. Other Adjustments		-290	0	0

**Change Summary Explanation:**

**Funding:** FY04 - Congressional adjustment for CBD (+\$16,500K CB2; +\$25,550K TB2; +\$4,500 TC2).

**Schedule:**

**Technical:**

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE                  (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	104232	81482	63494	66321	52802	49219	50237	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 Nuclear, Biological, Chemical (NBC) survivability. Of special interest are two Defense Technology Objectives described as follows: (1) The fate of 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, e.g., less than 0.1 ECt-50, 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.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	56557	16724	16800

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**FY 2003 Accomplishments:**

- 4540 Stand-off Biological Aerosol Detection (DTO CB35) - Initiated construction and characterization of breadboards to demonstrate the capability to detect and discriminate between 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 based on the results of the downselect and user input.
- 1824 Wide Area Aerial Reconnaissance for Chemical Agents (DTO CB53) - Performed airborne phenomenology tests to adopt existing hyperspectral imaging sensors (100-Hz, 2x8 TurboFT and 0.3-Hz, 128x128 Adaptive Infrared Imaging System (AIRIS)) as next generation chemical stand-off sensors. Completed engineering designs for a 30-Hz, 64-pixel TurboFT, and a 3-Hz, 128x128 AIRIS.
- 3344 Integrated CB Stand-off Detector (DTO CB49) - Conducted initial downselection of potential technologies based on market survey and user input. Downselection process involved user community as well as internal and external technical experts and included performance, logistics, platform, operational concerns, maturity, and cost factors. Downselection process determined that efforts within DTO CB35 were needed as a basis to further development of integration concepts at an acceptable risk. DTO CB49 was merged into DTO CB35 in FY04.
- 1419 Biological Sample Preparation System (BSPS) for Biological Identification (DTO CB20) - Continued development of new taggant chemistry for multi-agent, multiplexing PCR assays. Conducted a feasibility analysis of what is required to make multiplex and multi-agent assays cost effective. Conducted an analysis of alternatives (AoA) based on feasibility study to design an optimized platform using multi-agent, multiplexing PCR assays. Analysis of alternatives determined that this approach was not cost effective to field. This effort was terminated at the end of FY03.

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**FY 2003 Accomplishments (Cont):**

- 2736 Chemical/Biological Agent Water Monitor (DTO CB37) - Completed downselection of technology for the detection of chemical agents in potable water. Continued technology development of detection of biological agents in potable water to include sample processing and preparation. Initiated the process for a Milestone A decision, transitioned effort to Advanced Technology Development.
- 3485 Point Detection, Biological Identification - Continued development of Force Discrimination Assay (FDA). Continued development and testing on automated chip-based phylogenetic analysis of biological materials. Continued development and testing of quantum dot technology for application to enhance antibody ticket technology for improved stability and sensitivity. Conducted evaluation and continued development of database for protein markers from biological agents for mass spectroscopy based systems. Evaluated the potential of aptamers as substitutes for antibodies in current platforms.
- 3699 Lightweight Integrated CB Detection (DTO CB 50) - Developed and partially populated database on technological parameters for downselection criteria. Initiated an AoA to downselect best technologies to meet the requirements of the Joint Modular CB Detector. Focused on physical methodologies like optical spectroscopy and pyrolysis gas chromatography ion mobility spectroscopy to address the requirements.
- 1280 Point Detection, Integrated CB - Initiated exploration of new concepts for small, combined chemical and biological sensors. Continued evaluation and development of millimeter wave spectroscopy and data fusion techniques to combine chemical and biological detection requirements.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1926 Polymer Based Chemical and Biological Sensors - Developed a technique for processing carbon based MEMS for use in biosensors. The carbon based MEMS are in the form of a micro-bridge array fabricated using standard integrated circuit methods to detect the presence of a biological agent through the use of low frequency resonance (i.e. vibration) of a freestanding bridge structure.</li> <li>• 964 Bioinformatics - Extended the CYTOSCAPE software architecture and relational databases to allow the easy manipulation of data from disparate sources in order to incorporate the higher-order information from proteomic and metabolomic data to give a holistic view of any organism.</li> <li>• 1923 Bio-Compact Disk Application Development - Demonstrated the feasibility of rapid, real time molecular detection and identification of a panel of biological warfare agents (BWA) on a modified compact disc system. The system will be automated, have a low unit cost, and require little training or expertise to employ.</li> <li>• 16966 Chem-Bio Defense Initiatives Fund - Identified proteomic biomarkers for the expansion of national database; enhanced a stand-off sensor to detect agents on surfaces; enhanced a field portable nucleic acid based biodetector; evaluated novel concepts for a lightweight, miniature chemical stand-off detector; evaluated concepts for a hand held biological agent detector; assessed novel materials for biological decontamination capabilities.</li> <li>• 4717 National Consortium for Countermeasures to Biological and Chemical Threats - Assessed an aptamer based high throughput sensor for rapid screening and detection of biological agents; evaluated an integrated system to detect bioterrorist events and natural epidemics; assessed the capabilities of synthetic, aptamer based antiviral vaccines; investigated novel countermeasures to selected viral diseases including encephalitis.</li> </ul>		
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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 5102 Anthrax Bio Defense Technologies - Initiated development and commercialization of an inexpensive and robust hand-held sensor that can be used by military field personnel with minimal training to detect low levels of bio warfare (BW) agents. The technology is based on antibodies supported on Love Shear horizontal acoustic wave devices. Preliminary data has shown that this technology has the potential to provide biological identification at an enhanced sensitivity of 10 to 100 times over current systems, within a few minutes, in a hand-held unit.</li> <li>• 2632 Detection of CB Contamination on Surfaces (DTO CB52) - Performed preliminary downselection of technologies to include factors such as performance, logistics, platform, operational concerns, maturity, and cost. Initiated construction of breadboards to demonstrate the capability to detect chemical agents at a deposition of 0.5 g/m<sup>2</sup> and operationally significant biological agent contamination levels to be determined.</li> </ul> <p><b>Total 56557</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4901 Stand-off Biological Aerosol Detection (DTO CB35) - Complete construction and 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.</li> <li>• 1634 Wide-Area Aerial Reconnaissance for Chemical Agents (DTO CB53) - Complete the development a 30-Hz frame rate, 64-pixel Fourier transform infrared (FTIR) hyperspectral imager (TurboFT). Continue the development of AIRIS. Characterize the sensor performance on the TurboFT for downselection of technology in FY06. Initiated development of off-line algorithms and signal processing techniques.</li> </ul>		
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<p><b>FY 2004 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 400 Detection of CB Contamination on Surfaces (DTO CB52) - Collect data on three surfaces for four surety agents using laser enhanced Raman spectroscopy to detect the presence of the chemical agents. Effort reduced due to FY04 funding adjustments.</li> <li>• 4139 Point Detection, Biological Identification - Complete development and demonstration of Force Discrimination Assay (FDA). Complete development and testing automation of chip-based phylogenetic analysis of biological materials. Identify 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. Continue development of database for protein markers from biological agents for mass spectroscopy based systems.</li> <li>• 1634 Lightweight Integrated CB Detection (DTO CB50) - Complete the population of the technical parameter database. Transition the analysis of alternatives to advance development for downselection for best technology to meet the requirements of the Joint Modular CB Detector.</li> <li>• 816 Point Detection, Integrated CB - Continue exploration of novel concepts in small, combined chemical and biological sensors. Continue development of millimeter wave spectroscopy.</li> <li>• 3200 Laser Induced Surface Analysis (LISA) Prototype - Construct and demonstrate 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 suitable for integration into a recon vehicle to demonstrate on the move capability.</li> </ul> <p><b>Total 16724</b></p>		
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<p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4600 Stand-off Biological Aerosol Detection (DTO CB35) - Evaluate breadboards via field testing and demonstrate the capability to detect and discriminate biological vs non-biological agents at concentration of 1,000 ACPLA at a range of 1 km. Initiate feasibility studies to integrate chemical and biological capabilities with the objective of maintaining demonstrated capabilities.</li> <li>• 1500 Wide-Area Aerial Reconnaissance for Chemical Agents (DTO CB53) - Complete the development a 3-Hz, 128x128 tunable hyperspectral imager (AIRIS). Characterize the sensor performance of the AIRIS for technology downselection in FY06. Complete off-line algorithms and signal processing techniques.</li> <li>• 4500 Detection of CB Contamination on Surfaces (DTO CB52) - Reinitiate breadboard construction and characterization due to FY04 funding adjustments. Initiate feasibility studies to determine the ability to detect biological agents on surfaces.</li> <li>• 2700 Point Detection, Integrated CB - Complete exploration of novel, small, chemical and biological sensors. Initiate exploration and concept development for new concepts for small, combined chemical and biological identifiers. Conduct feasibility studies and perform a cost benefit analysis on "low consumable or reagentless" concepts. Complete first generation breadboard based on millimeter wave spectroscopy.</li> <li>• 3500 Point Detection, Biological Identification - Initiate development of micro-array concepts to meet high throughput and reduce logistical burden on biological identification requirements. Complete mass spectroscopy database development and transition to advanced technology development to populate database to extend biological material information.</li> </ul> <p><b>Total 16800</b></p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	10123	5262	7928

**FY 2003 Accomplishments:**

- 912 End-of-Service-Life Indicators (ESLI) for NBC Mask Filters (DTO CB36) - Completed baseline evaluations of candidate technologies. Performed analysis of battlefield interferences. Conducted a value-added analysis to assess benefits of the ESLI to the warfighter. Downselected to top three candidate technologies. Fabricated and evaluated ESLI/filter concept models. Optimized baseline design and determine optimum ESLI location.
- 1520 Self-Detoxifying Materials for Clothing Applications (DTO CB45) - Continued to assess new reactive compounds and treatments for improved detoxification in membranes. Developed concepts for nanoreactors and surface-migrating phases for improved agent breakdown within membranes and coatings. Selected relevant reactive nanoparticles and polymeric materials for subsequent processing and testing studies. Characterized the reaction kinetics and loading capacity of N-halamines treated materials with CWA simulants.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2027 Collective Protection, Filtration - Completing database and model of adsorption equilibrium and rate processes for high priority TICs. Optimized candidate adsorbents for use in regenerative filtration applications that are effective against a wide spectrum of TIC and Chemical Warfare Agents (CWA). Completed development of initial pressure, temperature, and electrical swing adsorption (P/T/E/SA) regeneration models and fabrication of test stands. Completing proof of principle testing and evaluation of 50 CFM pressure temperature swing adsorption filter to validate model. Completing evaluation of electrostatic and biocidal filter enhancement for aerosol and particulate capture and deactivation. Evaluated degradation effects of TICs on HEPA filters and proposed mitigation concepts. Completed initial literature review for developing hybrid air purification systems incorporating technologies providing broad protection. Finished trade study assessing feasibility and application of open and closed circuit air supply and rebreather technologies. Completed chemical and physical residual life indicators (RLI) sensor testing and developed RLI prototype concept.</li> <li>• 1135 Collective Protection, Shelters - Continued development and evaluation of advanced CB shelter materials (shell, support, airlocks, liner, seams, and seals). Two new hermetic seals for shelters were fabricated and tested. Four new CB shell materials were developed to include constructed shelter systems. Completed initial computational fluid dynamic modeling of one airlock system. Continuing development and testing of chemistries for self decontaminating shelter materials. Completed initial assessment and modeling of shelter materials failure mechanisms to conventional weapons blast pressure effects and proposed transition to JCPE.</li> </ul>		
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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1393 Individual Protection, Clothing - Completed testing of fielded and developmental protective garment materials to evaluate their effectiveness against TICs, and to provide recommendations to the user community. Characterized the surface phenomena occurring in ion implanted polymers and determined the transport properties of moisture and chemicals of those polymers. Completed transport and physical characterization of selected candidate permselective membranes, and initiated detailed analysis of structure property relationships. Optimized materials and material treatment solutions for overgarments to improve protection against NTA aerosols. Identified sampling techniques and assessed clothing air velocities as an initial step in evaluating the effects of atmospheric temperature and wind on agent penetration of IPE. Validated recent research which indicates that intermittent cooling to various body regions can provide as much cooling benefit (in terms of core temperature reduction) as cooling continuously, but at a fraction of the MCS capacity. Inadequate funding to continue development of this area during FY04. Funding to resume in FY05.</li> <li>• 1216 Advanced Adsorbents for Protection Applications (DTO CB08) - Completed database and model of adsorption equilibrium and rate processes for four agent classes. Identified adsorbent bed compositions that provide the level of protection required by the JSGPM, JCPE, and JTCOPS programs for all CW agents and the highest priority toxic industrial chemicals (TICs). For single pass applications several adsorbent compositions were transitioned to Joint Program Manager for Individual Protection for use in the JSGPM and for regenerative applications several proposed bed compositions were identified for full spectrum protection capability (light to heavy TIC/CWA).</li> </ul>		
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**FY 2003 Accomplishments (Cont):**

- 1920 Individual Protection, Masks - Initiated development of advanced mask concepts focusing on lightweight system integration, a wider range of protection, and reduced thermal load. Assembled advanced mask concept prototypes for preliminary human factor studies. Initiated optimization of candidate sorbent media structures by the testing of media properties and the modification of that media to improve performance. Optimized candidate lens materials through the evaluation of chemical and physical properties and the modification of that material to enhance performance. Developed and evaluated new and improved mask technologies to improve protection through novel sealing and pressurization options. Identified appropriate aerosol generation and detection equipment, developed and validated test procedures.

**Total** 10123

**FY 2004 Planned Program:**

- 850 Collective Protection, Shelters - Continue development and testing of advanced CB shelter materials and prototype shelter system components (shell, liner, support, airlocks, seams and seals). Identify and test optimal chemistries for self decontaminating shelter materials and applications. Conduct airflow modeling of airlock and contamination control area 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 for NBC Mask Filters (DTO CB36) - Fabricate and conduct 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). Assessments will include determining the effects of common environmental factors (heat and humidity) that may impact ESLI performance and evaluating the effects of long term storage.

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<p><b>FY 2004 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1500 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) - Demonstrate ability to produce materials employing self detoxification chemistries for G-agents, VX, and HD by commercial electrospinning. Demonstrate improved reactivities for hyperbranched surface migrating compounds. Demonstrate agent deactivation chemistry of fiber bound catalysts through solution and vapor challenge testing for a target reactivity level of 2 mg agent/cm<sup>2</sup>/day. Demonstrate effectiveness of scaled up N-halamine treated materials against significant biological. Demonstrate nanoparticle reactivities in excess of 2 mg agent/cm<sup>2</sup>/day in both fiber and coating form. Downselect most reactive, cost effective nanoparticle compositions and optimize those materials for reactivity rates and range of materials they detoxify</li> <li>• 522 Individual Protection, Masks - Refine advanced mask system concepts using actual technologies to the maximum extent possible. Optimize candidate mask sealing options and assess antifogging and moisture control technologies. Prepare human use bio-aerosol protection factor assessment protocol, establish and validate test procedures, and conduct human PF study with monodisperse inert aerosols.</li> <li>• 890 Advanced Adsorbents for Protection Applications (DTO CB08) - Complete validation of single-pass and regenerative filtration adsorption models. Complete performance verification of adsorbents for use in NBC filtration systems with emphasis on regenerative materials. Selected adsorbent beds will undergo performance verification testing to fully assess the performance constraints expected in the host filter system. These evaluations will consider adsorbent bed performance under a wide range of agent challenge concentration scenarios and environmental conditions. Selection of the best adsorbent bed composition for regenerative filtration application will be made. If temperature swing adsorption and pressure swing adsorption are both considered viable regenerative filter technologies, at least two different adsorbent bed compositions will be selected.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 600 Collective Protection, Filtration - Characterize constraints of mature candidate adsorbent compositions against a wide range of TIC and CWA including aging, chemical reaction regeneration cycles, relative humidity, temperature, and material compatibility. Optimize regenerative process (including, temperature, pressure, ECS, cycle time) using verified candidate adsorbent materials. This task will mature the technology for future consideration as an advanced technology demonstrator. Complete literature review and database of unit processes for developing hybrid air purification systems. Downselect anti-microbial aerosol/particulate filter media, complete initial testing and develop enhanced prototype.

**Total** 5262

**FY 2005 Planned Program:**

- 800 End-of-Service-Life Indicators for NBC Mask Filters (DTO CB36) - Assess the effects of common battlespace interferences 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., or optimize existing indicators as required, to detect sorbent depleting battlefield contaminants.
- 1200 Advanced Air Purification System Model (DTO CB61) - Develop model for hybrid air purification systems that incorporate mature unit processes for the purpose of providing broader protection than current single pass filter technology. Develop a matrix model for hybrid air purification systems that can address wide application requirements by providing the optimal mix of technologies.



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**FY 2005 Planned Program (Cont):**

- 1528 Individual Protection, Clothing - Optimize ion implantation conditions for maximum permselectivity and demonstrate optimized membranes. Complete analysis of membrane structure property relationships, optimize the most promising membranes, evaluate the properties of modified membranes, and produce and evaluate fabric systems which include the optimized membranes. Investigate selectively permeable membranes and new reactive membranes for addressing NTA aerosols, and conduct agent testing of optimized NTA protective systems. Develop swatch test technology for assessing role of wind speed, temperature in challenge penetration of individual protection equipment. Initiate development of advanced ensemble closure technologies to reduce/prevent aerosol penetration. Identify thermal management technologies for protective ensemble applications.
- 1000 Collective Protection, Shelters - Continue development and testing of advanced CB shelter materials and prototype shelter systems (shell, liner, support, airlocks, seams, seals and self decontaminating materials). Perform testing of shelter components incorporating self decontaminating materials.
- 300 Collective Protection, Filtration - Characterize and optimize performance of advance aerosol/particulate removal processes providing enhanced protection. Develop regenerative filtration advanced technology demonstrator.

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<p><b>FY 2005 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1400 Self-Detoxifying Materials for Chemical/Biological Protective Clothing (DTO CB45) - Demonstrate reactivity stability to realistic time, temperature, and use conditions. Optimize materials and processing conditions for reactive fibers/membranes. Improve durability and overall cost effectiveness of scaled up electrospun self detoxifying membranes, N-halamine treated textiles, and materials containing reactive nanoparticles. Downselect reactive particles and processing approach for fibers/membranes. Select materials from DTO and related projects (DARPA SBIR, congressional program) for the development of prototype garments. Measure chemical/aerosol breakthrough of candidate fabrics. Measure durability and effectiveness of candidate fabrics from all sources. Conduct toxicology and live agent testing of manufactured fabrics. Optimize/downselect fabric design from agent and durability testing.</li> <li>• 1700 Individual Protection, Masks - Develop advanced mask system prototypes using enhanced technologies to the maximum extent possible. Continue optimization of candidate sorbent media structures by testing of the properties of the media and modification of that media to improve performance. Continue optimization of candidate lens materials through the evaluation of chemical and physical properties and the modification of that material to enhance performance. Develop at least three technology concepts by integrating best option technologies and conduct both laboratory and human factors evaluations. Establish and validate bio-aerosol protection factor assessment test procedures, and conduct human PF study with polydisperse inert aerosols.</li> </ul> <p><b>Total    7928</b></p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	5884	3150	3400

**FY 2003 Accomplishments:**

- 2100 Decontamination, Oxidative Decontamination Formulation (DTO CB44) - Conducted contact hazard and off gas testing on coupons and initiated material compatibility testing for the peroxy carbonate decontamination solution. Optimized formulations using the peracid approach and conducted live agent testing. Integrated other oxidative approaches into the DTO. Developed concepts for delivery of multi-component liquid and solid decontaminants.
- 1400 Decontamination, Sensitive Equipment - Completed feasibility studies for interior decontamination technology solutions for JSSSED using plasma technology approaches. Developed a man portable approach for the cleaning of small sensitive surfaces based upon reactive sorbents in solvent suspensions.
- 1520 Decontamination, Solution Chemistry - Completed evaluation of multi-enzyme decontamination system for G, V and H class agents.
- 864 Decontamination, Solid Phase Chemistry - Completed evaluation of novel solid and sorbent decontamination applications using nanoscale metal oxides, zeolites and solid phase reduction/oxidation couples.

**Total** 5884

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<b>FY 2004 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 1905 Decontamination - Oxidative Formulation (DTO CB44) - Initiate chamber testing over operational temperature range, finish material compatibility testing and formulate peroxy carbonate and peracid candidates into a dry powder and/or concentrated liquid. Finalize formulation of newly added oxidative approaches and conduct material compatibility and agent testing.</li> <li>• 720 Decontamination, Sensitive Equipment - Complete evaluation of man portable approaches for the cleaning of small sensitive surfaces for use in the interior of vehicles and aircraft.</li> <li>• 525 Decontamination, Solid Phase Chemistry - Initiate evaluation of oxidatively enhanced nanoparticles as reactive sorbents for both chemical and biological agent decontamination.</li> </ul>		
<b>Total 3150</b>		
<b>FY 2005 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 800 Decontamination, Solid Phase Chemistry - Assess new materials being investigated under basic research programs for potential use and transition as reactive and sacrificial coatings. Evaluate oxidatively enhanced reactive nanoparticles and initiate testing of novel nanocrystalline zeolites.</li> <li>• 300 Decontamination, Sensitive Equipment - Assess immature technologies as identified in market surveys and the analysis of alternatives for potential JSSED product improvements.</li> <li>• 2300 Decontamination - Oxidative Formulation (DTO CB44) - Complete chamber testing over operational temperature range, finish material compatibility testing, and formulate new oxidative approaches into a dry powder and/or concentrated liquid.</li> </ul>		
<b>Total 3400</b>		
<div style="display: flex; justify-content: space-between;"> <span>Project CB2/Line No: 015</span> <span>Page 20 of 64 Pages</span> <span>Exhibit R-2a (PE 0602384BP)</span> </div>		

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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Supporting Science and Technology	17651	21937	27366

**FY 2003 Accomplishments:**

- 2790 Aerosol Technology - Fabricated and tested novel high efficiency aerosol inlet brassboard. Designed and fabricated first breadboards of novel aerosol collectors and concentrators for low temperature, low power, and full particle size range operation. Initiated computational fluid dynamics (CFD) studies to assess and improve performance of various aerosol collector and concentrator devices of military interest. Characterized performance of a variety of novel design and developmental aerosol collectors in aerosol chambers and wind tunnels. Developed novel aerosol generation device for high air speed testing. Initiated construction of enhanced lidar aerosol test cell. Fabricated and tested automated ink jet aerosol generator.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3955 Threat Agents and Simulants - Interfaced with intelligence community to determine synthesis targets. Continued to fill data gaps relative to physical properties of conventional and novel chemical threat agents. Continued to develop quantum chemical methods to discover novel synthesis routes for chemicals of interest. Interfaced with intelligence community to focus investigations of biological agents and stimulants of concern. Novel preparations of spores from stimulants, non-pathogenic and pathogenic anthrax were implemented. Size of multiple bacillus species was measured. Determined the fluorescence spectrum of seven different bacillus spores. Initiated TEM analysis of Yersinia species. Evaluated sporocidal activity of three military decontaminants on non-pathogenic and pathogenic anthrax on two surfaces of military interest. Initiated integration of data produced in this project with ASK Biological Database. Measured size distributions of several Bacillus species. Developed design for modifying Eh outer membrane protein using molecular genetic techniques. Demonstrated that antigens giving rise to bands in Western blot analysis are also present in cell wall preps from E. coli. Identified two cross-reaching proteins (E. coli and Eh) by N-terminal sequencing as outer membrane proteins. Identified additional CB stimulant and agent data requirements and data. ASK v2.1 reviewed for accuracy and software updated. ASK v2.0 User's Manual and help files were completed. Continued outreach program to maintain awareness of activities at other sites. Continued efforts to identify biosimulant needs of the RDT&amp;E user community. Identified monoclonal antibodies for six antigenic targets against a 12-mer peptide library expressed in E. coli.</li> <li>• 5067 Low Level Operational Toxicology Studies - Completed inhalation data sets to define longer time, lower level operational effects for sarin (GB) in swine and a second generation agent (GF) in rats. Developed a valid marker (dosimetric) for nerve agent exposure suitable for predicting agent effects across species to refine operational human health risk assessment.</li> </ul>		
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**FY 2003 Accomplishments (Cont):**

- 1516 Predictive Modeling - Agent Fate (DTO CB42) - Fielded Phase I Chemical Hazard Estimation Methodology and Risk Assessment Tool. (CHEMRAT). Constructed two tools for simulating and assessing the evaporation of toxic liquids from contaminated surfaces. Developed a surface evaporation assessment tool to evaluate methodologies and compare with actual agent test results. Completed a VLSTRACK sensitivity analysis. Completed a surface evaporation database, which includes 26,115 field trials and data for coated surfaces and other military materials.
- 924 Methodology Development - Agent Fate (DTO CB42) - Determined VX fate (reaction kinetics) on/within concrete by nuclear magnetic resonance (NMR) methods. Developed methodology for varying humidity and temperature by NMR with simulants. Optimized and validated the head space solid phase micro extraction (HS-SPME) method for analyzing chemical warfare agents on surfaces. Completed HS-SPME measurements of VX on concrete, asphalt, and soil at multiple temperatures.
- 1246 Lab-Scale Wind Tunnel Studies - Agent Fate (DTO CB42) - Focused technical efforts on building and validating lab wind tunnels for agent surface evaporation testing. Three levels/scales of laboratory apparatus have been characterized and proven out for agent fate testing. Measured surface evaporation of HD on glass in field and lab scale testing. Characterized properties affecting surface evaporation, i.e., spread factors, porosity, etc.
- 1554 Large-Scale Wind Tunnel Studies - Agent Fate (DTO CB42) - Developed Agent Wind Tunnel Test Matrix for three agents (GD, HD, and VX) plus thickened variants, four substrates (asphalt, concrete, grass, sand), and three levels of temperature, relative humidity, wind speed, and droplet size. Defined statistically optimized test schedule of 62 experiments for each agent/surface combination. Validated mid scale lab wind tunnel for agent surface evaporation testing in Czech Republic and correlated with work in U.S.

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**FY 2003 Accomplishments (Cont):**

- 599 Environmental Fate of Agents - Conducted Phase 2 of the literature survey and analysis effort. A matrix of planned number of tests versus agent and substrate for laboratory, wind tunnel, and open-air scales was completed. Techniques for formulation and dispersal of thickened agent was established and documented. The surface evaporation database was completed to include data found by the literature search. Laboratory studies, wind tunnel tests, and field trials for live agents was performed and documented. Data addressed rates of evaporation, ad/absorption, desorption, decay, and droplet spread; chemical adsorption effects on equilibrium; and contact transfer as a function of time. A baseline improved surface evaporation inhalation and contact hazard module was developed. CHEMRAT used the baseline model and new threat scenarios.

**Total** 17651

**FY 2004 Planned Program:**

- 2859 Aerosol Technology - Experimentally and by CFD analysis, initiate investigations of inlets to facilitate aerosol collection in high air speed conditions. Continue experimental and CFD studies of microHEPA, electrostatic collector, mini-slit and other low power aerosol collection devices. Fabricate and test breadboard aerosol collector capable of low temperature operation. Characterize and evaluate emerging collectors and collection technology. Develop new aerosol generation and analysis techniques including methodology development to generate suitable chemical simulant aerosol challenges. Complete enhanced lidar aerosol test cell to support stand-off detection tests. Continue development of new methodology for quantifying biological aerosols captured in collector/concentrator characterization experiments.



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**FY 2004 Planned Program (Cont):**

- 2756 Threat Agents and Simulants - Continue efforts to determine and validate new synthesis targets. Discontinue quantum chemistry research due to funding reductions. Continue to fill data gaps relative to classical and novel threat agents, toxic industrial chemicals, and CWA simulants. Complete investigations of physical and decontamination properties of B. anthracis. Investigate physical properties and decontamination properties of E. herbicola and baculovirus. Continue update of classified ASK databases and provide to CBIAC when completed. Continue effort to identify and validate non-pathogenic antigen mimics. Complete methodology development for assessing inhalation toxicity of non-traditional agents.
- 5600 Low Level Operational Toxicology Studies (DTO CB51) - Complete initial inhalation studies for the nerve agents GF and VX. Deliver a refined operational human health risk assessment for those agents suitable for integration into Operational Risk Management processes used by commanders in military settings. Evaluate the utility of diverse non-human data for extrapolation to human conditions based on a common dosimetric.
- 1690 Predictive Modeling - Agent Fate (DTO CB42) - Develop evaporation and liquid contact models and integrate into the Joint Effects Model (JEM). Expand surface evaporation database to include all agent/simulant data from large area surfaces and continually add data generated from the Agent Fate program. Expand the features and accuracy of CHEMRAT by including current data from the Agent Fate program to support Operation Iraqi Freedom and future military operations. Calibrate VLSTRACK by adjusting parameters relevant to secondary evaporation to provide better vapor hazard and liquid persistence estimates. Enhance SRFSIM and SURFIT assessment tools by including secondary evaporation methodology from the Hazard Prediction Assessment Capability model (HPAC). Perform sensitivity analysis of HPAC 4.0.3 secondary evaporation methodology.

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**FY 2004 Planned Program (Cont):**

- 1060 Methodology Development - Agent Fate (DTO CB42) - Determine degradation products of agents on surfaces of interest such as concrete. Using HS-SPME, measure and correlate VX, GD, and HD on Czech concrete vs. NIST standard concrete. Using HS-SPME, measure VX, GD, and HD on asphalt, soil and metal/glass at three humidity levels and compare single vs. multiple droplets surface contamination. Initiate HS-SPME measurements of NTAs. Initiate soil methodology development and determine sorption and fate of GD on dry sand and its response to simulated rainfall. Determine the fate of RVX, NTA, and HD on concrete by NMR and add GD if schedule allows.
- 2255 Lab-Scale Wind Tunnel Studies - Agent Fate (DTO CB42) - Measure surface evaporation of HD and GD on asphalt in lab wind tunnels. Measure surface evaporation of HD and VX on concrete in lab wind tunnels. Initiate investigations of VX and NTAs on asphalt.
- 2075 Large-Scale Wind Tunnel Studies - Agent Fate (DTO CB42) - Initiate surface evaporation of thickened GD, VX, and HD on concrete and asphalt. Complete fabrication and certification of large scale wind tunnel in the UK. Field Testing Methodology will be reviewed to prepare for resumption of outdoor testing in FY05. Continue wind tunnel testing of HD, GD, and VX on asphalt, sand, and vegetation.

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**FY 2004 Planned Program (Cont):**

- 1642 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 chemical and biological threat agents. Continue to characterize fundamental properties of *Y. pestis*. Continue characterization of fundamental properties of a viral family and initiate characterization on a second viral family selected by biodefense priorities. Complete validation studies on simulant BG spores and continue improvement of *Erwinia herbicola* antigenicity, exploration of novel "peptide-based" bio simulants, and research on a new viral simulant. Continue development of an agent simulant knowledge base technical information system with emphasis on completion of environmental database and initiate the collection and quality assessment of classified and incapacitating agent data. Load bioinformatics database with fundamental non-medical properties.
- 2000 Biological Agent Fate - Initiate an accelerated all-source compilation and analysis of existing literature data that addresses the persistence (viability) of biological warfare agents released into the operational environment. Conduct a state of current research expert workshop in conjunction with NATO/allied investigators to document research efforts in the fate of biological agents. Deliver a documented assessment of identified data gaps and produce a targeted Defense Technology Objective (DTO) research program.

**Total** 21937

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**FY 2005 Planned Program:**

- 3040 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 CWA simulants. Investigate physical properties and decontamination properties of *B. mallei* and baculovirus. Complete effort to identify and validate non-pathogenic antigen mimics.
- 1670 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 chemical and 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.
- 2119 Aerosol Technology - Continue investigations of approaches to advanced inlets for aerosol collection in high air speed conditions. Continue experimental and CFD studies of microHEPA, 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. Initiate CFD modeling for the windbreak approach of sampling omnidirectionally from high speed flows.

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<p><b>FY 2005 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1668 Biological Agent Fate - Initiate a targeted Defense Technology Objective (DTO) research program that corrects deficiencies in the understanding of the persistence (viability) of biological warfare agents intentionally released into operational environments. Multiple media, such as food and water deliveries, as well as concerns for interior surfaces as identified by the DoD Joint Requirements Office will be included in this effort.</li> <li>• 1324 Methodology Development - Agent Fate (DTO CB42) - Determine degradation products of agents on surfaces of interest such as concrete. Examine the fate of VX, GD and NTA on asphalt by 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 VX on sand and clay soil. Determine sorption and fate of GD and VX on assembled test soil.</li> <li>• 3180 Predictive Modeling - Agent Fate (DTO CB42) - Evaluate Agent Fate secondary evaporation model versus the VLSTRACK module and evaluate each with agent field trials to determine accuracy of downwind vapor predictions. Tune model/module and integrate into JEM. Transition effort to JEM Program Office. Continue to work the scaling of agent vapor concentrations from laboratory to outdoor test conditions. Continue CHEMRAT update with new agent fate test data. Continue to update secondary evaporation model with new agent fate test data and incorporate into JEM.</li> <li>• 4490 Lab-Scale Tunnel Studies - Agent Fate (DTO CB42) - Initiate surface residual agent testing to determine contact hazard. Complete surface evaporation tests of VX and NTAs on asphalt. Measure surface evaporation of thickened HD, GD and VX on asphalt and concrete.</li> </ul>		
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**FY 2005 Planned Program (Cont):**

- 4375 Large-Scale Wind Tunnel Studies - Agent Fate (DTO CB42) - Develop methodology to correlate lab scale to large scale and outdoor test results. Design and conduct validation tests of surface evaporation model for agents on concrete.
- 5500 Low Level Operational Toxicology Studies - Complete 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 out in time for inhalation exposures to GF expected in various military response settings. Initiate VX studies that extend time-effect predictive capability.

**Total** 27366

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Technology Systems	6313	7010	8000

**FY 2003 Accomplishments:**

- 1216 Planning, Training and Analysis - Demonstrated HLA application of hazard models. Conducted statistical analysis of results of agent toxicity load variation in several hazard prediction models for fixed site application.

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**FY 2003 Accomplishments (Cont):**

- 1682 Environment (DTO CB55) - Improved next-generation model (MESO) to include wet biological modifications, improved accuracy over rough terrain, and further improvements to boundary layer atmospheric physics. Evaluated performance of computational fluid dynamics model (CBW-CFX) on ships and fixed land structures and identify areas for improvement. Demonstrated performance of coupled weather/CBW dispersion model. Evaluated performance of hazard evolution codes updated by agent environmental effects data.
- 674 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Completed initial operational capability of Aerial Port of Debarkation (APOD) module. Conducted independent validation and verification (V&V) of fighter base module. Initiated development and testing of Sea Port of Debarkation (SPOD) module.
- 1424 Simulation Based Acquisition - Initiated testing of prototyping models against highest priority CBD objects. Developed and demonstrated a breadboard virtual prototype system.
- 1317 Battle Management - Expanded studies to address data fusion approaches for multiple sensors. Assessed value added at system-level (multiple networked CB sensors and non-CB sensors) through modeling and demonstration. Initiated examination of methods to improve real-time, network-aided decision making, and visualization of network responses.

**Total** 6313

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**FY 2004 Planned Program:**

- 2110 Battle Management - Initiate 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 C4ISR architecture.
- 1890 Planning, Training and Analysis - Test and finalize APOD and SPOD representation. Define Contamination Avoidance for Seaports of Debarkation (CASPOD) data requirements. Populate SPOD representation. Support Joint Operational Effects Federation (JOEF) Block I demonstration. Perform independent validation and verification on core model.
- 1800 Chemical and Biological Hazard Environment Prediction (DTO CB55) - Transition advanced predictive capabilities (MESO) to JEM Block II program. Further enhance the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging. Investigate availability of high altitude disbursement model in support of JEM Block II.
- 1210 Simulation Based Acquisition - Develop support tools for future acquisition decisions that would emerge from a study of CBDP requirements. Identify user base from within the CBDP. Begin prototype tool design efforts.

**Total** 7010



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**FY 2005 Planned Program:**

- 1500 Chemical and Biological Hazard Environment Prediction (DTO CB55) - Enhance the complex terrain and flow around structures modeling capability to address variable surface characterization and solar effects on agent evaporation. Perform code optimization and validation of the complex terrain and flow around structures tools.
- 1000 Simulation Based Acquisition - Complete tool design and begin prototype construction and testing. Use iterative user-focused design techniques to enhance tool usability and acceptance.
- 3250 Battle Management - Continue efforts to optimize data fusion and decision-making across networks and to provide visualization of network sensor responses within the current and planned C4ISR architecture.
- 2250 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Test and finalize toward JOEF Block II transition. Develop Marine Expeditionary Force HQ, depot, and railhead modules. Perform internal V&V. Prepare for external V&V by PM.

**Total** 8000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Applied Research	7704	26011	0

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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 2889 Countermeasures to Biological and Chemical Threats - Continued studies of combinative toxicity of biological toxin mixtures. Continued study into mechanisms of cell death. Successfully performed initial tests of selenium based antibiotic and anti-viral compounds. Continued with successful development of non-woven materials for use in decontamination suits. Continued modeling of biological dispersion in buildings and cities. Continued studies of natural mechanisms of ricin breakdown. Continued development of an ultraviolet visible based miniature diode detector for chemical and biological agents.</li> <li>• 3851 Air Purification Collective and Individual Protection - Developed and evaluated filter material formulations for efficacy against biological threat agents.</li> <li>• 964 Air Contaminant Monitoring System - Employed novel networking technologies to link environmental air quality monitoring sensors to determine feasibility to detect, track and respond to an intentional chemical warfare agent release in an urban and suburban setting.</li> </ul> <p><b>Total</b> 7704</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 990 Automated Lipid Phase Detection of Toxic Compounds - Automated lipid phase detection of toxic compounds program is being baselined.</li> <li>• 2078 Bioinformatics - Continue creating tailored approaches to extract and rapidly analyze biological data to enhance the study of chemical and biological threat agent effects.</li> </ul>		
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<p><b>FY 2004 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1385 Bioinformatics Network - Create linkages which interactively approach the extraction of rapid analysis of biological data.</li> <li>• 1039 Bioinformatics Equipment - Explore technologies for bioinformatics equipment.</li> <li>• 990 Early Warning and Detection Program - Explore technologies for early warning and detection.</li> <li>• 5439 LSH-SAW Biosensor - Investigate acoustic wave technology for biosensors.</li> <li>• 2374 Detection of Chemical, Biological and Pollutant Agents in Water - Continue technology development to detect CB and pollutant agents in potable water sources.</li> <li>• 990 Air Containment Monitoring System - Continue development of systems for contained air monitoring for chemical agents.</li> <li>• 990 Atmospheric Plasma for Bio Defense Decon - Investigate technologies for atmospheric plasma for biological defense decontamination.</li> <li>• 1236 Rapid Decontamination System for Nerve Agents - Explore technologies for rapid decontamination system for nerve agents.</li> <li>• 990 Remote Optical Sensing Program - Explore technologies for remote optical sensing.</li> <li>• 3462 Consortium for Countermeasures for Biological Threats - Develop multiple technologies and implementations to counter the threat of attack using biological threat agents against civilian and military populations.</li> <li>• 2078 Center for Information Assurance Security - Investigate technologies for information assurance security.</li> <li>• 983 GMU Center for Bio Defense - George Mason University Center for biological defense program being baselined.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 987 Long Range Biometric Target ID System - Explore technologies for a long range biometric target identification system.

**Total 26011**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	1388	0

**FY 2004 Planned Program:**

- 1388 SBIR - Small Business Innovative Research

**Total 1388**

<b><u>C. Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	46712	93505	40527	25836	30838	31309	31957	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	10815	4208	5257	4563	4114	3194	3259	Cont	Cont

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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	47183	47747	22622	15371	15658	16431	13113	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 (DTO); science and technology programs in medical biological defense (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines); and directed research efforts, including the Chemical and Biological Defense Initiative (CBDI) fund.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	24867	15571	10984

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**FY 2003 Accomplishments:**

- 1622 Therapeutics, Bacterial - Evaluated novel antibiotics and other therapeutics in established in vitro assays and animal models. Established a database of therapeutic profiles for various species of bacterial threat agents.
- 7269 Therapeutics, Toxin - Continued high-throughput assessment of candidate therapeutic inhibitors for botulinum neurotoxin. Completed testing and development of cell-free assay for assessment of candidate therapeutic inhibitors of staphylococcal enterotoxin (SE). Selected lead candidate inhibitors based upon results in cell-free and cell-based assays and prepared toxin-inhibitor crystals for x-ray diffraction analysis. Evaluated the outcome of structural stabilization and optimization studies on lead inhibitors of botulinum and SE.
- 1319 Therapeutics, Viral - Continued assessing the potential for immunotherapy against Ebola virus in non-human primate models. Initiated characterization of sixteen monoclonal antibodies to identify other protective epitopes on Ebola virus glycoprotein (GP). Identified pharmacological compounds provided by industry that disrupt filovirus growth in cell culture. Assessed therapeutic action of compounds in mouse and higher animal models of filovirus infection. Continued research for development of a variola animal model at the Centers for Disease Control and Prevention (CDC).
- 1438 Therapeutics, Medical Countermeasures - Accelerated research to define criteria for successful therapeutics against toxins and viruses to obtain diverse compounds such as inhibitors, channel-blockers, natural product extracts, and peptides that show promise as potential therapeutics against botulinum neurotoxins, staphylococcal enterotoxin, ricin toxin, and viruses. Continued characterizing and refining the smallpox higher animal model for use in determining the effectiveness of post-exposure therapies.

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**FY 2003 Accomplishments (Cont):**

- 2875 Therapeutics, Genetically Engineered Threat Medical Countermeasures - Accelerated research efforts directed toward compiling and prioritizing function-based structural elements that constitute known toxins and virulence factors of biological threat agents. Continued developing integrated databases of protein domains or three-dimensional structural elements identified as virulence factors in biological threat organisms.
- 964 Therapeutics, Monoclonal Antibody Based Technology - Continued research toward development of a proprietary heteropolymer (HP) system as a potential therapeutic for acute anthrax intoxication. Conducted in vivo assessment of the HP system in a transgenic mouse strain expressing the human CR-1 receptor on red blood cells. Performed in vivo assessments comparing the therapeutic capability of monoclonal antibody 14B7, which has high affinity for anthrax toxin, alone and within the HP system.
- 2300 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Determined the optimum dose of cidofovir in the appropriate non-human primate model using both the lethal pulmonary and lesional infection models with monkeypox. Characterized disease pathogenesis in both animal models. Performed studies to establish the therapeutic window in the variola model developed with the CDC.
- 1495 Therapeutics (CBDI), Bacterial, The National Center for Biodefense - Developed prophylaxes and treatments to test the effectiveness of a combination of lethal toxin inhibitors/blockers and antibiotics in reducing the mortality rate of anthrax infection. Tested the effectiveness of protease inhibitors in treating late-stage anthrax infection. Determined the role of Toll Like Receptors (TLRs) as targets for specific and broad-spectrum protection by developing and testing TLR antibodies and soluble receptors.

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**FY 2003 Accomplishments (Cont):**

- 2495 Therapeutics (CBDI), Bacterial, Heteropolymer Technologies for Anthrax Immunity - Developed an immunotherapeutic for the post-exposure treatment of inhalational anthrax in conjunction with antibiotics. This immunotherapeutic is a bispecific immunoconjugate heteropolymer (HP) biopharmaceutical agent targeting the protective antigen (PA) component of anthrax toxin. The two antibodies, anti-PA and anti-CR1, will be humanized.
- 1595 Therapeutics (CBDI), Bacterial, Oral Anthrax Antibiotic - Used combinatorial chemistry and rational drug design to synthesize additional antibacterial agents. Screened these agents for pharmacological activity. Optimized inhibitors to provide acceptable in vivo biological activity and other characteristics critical for drug development. Optimized lead compound synthesis for commercial production. Completed in vivo safety pharmacology and toxicology studies required for first-time-in-man and proof-of-principle biowarfare organisms.
- 1495 Therapeutics (CBDI), Bacterial, Rapid Antibody-Based Countermeasures - Analyzed convalescent sera samples from survivors of the Fall 2001 anthrax attacks in the USA, supplied by U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), using a proteomics platform to identify key antigens that are recognized by the human immune system during an anthrax infection. Performed proteomics analysis for a fully virulent Yersinia pestis strain, the etiologic agent for plague, grown in animals to identify secreted or membrane proteins that can serve as targets for the development of vaccines or diagnostic and therapeutic antibodies. Optimized an existing diagnostic/therapeutic antibody using proprietary technologies.

**Total 24867**



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**FY 2004 Planned Program:**

- 559 Therapeutics, Bacterial - Perform additional in vivo studies on efficacy of selected antimicrobial compounds against various bacterial threat agents in small animal models. Initiate 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 - Initiate testing of lead inhibitors of SE using in vivo model systems for assessment of therapeutic efficacy. Standardize in vivo model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy.
- 596 Therapeutics, Viral - Develop fluorescent-based methods for high-throughput screening for antiviral efficacy and cellular toxicity. Continue research to identify pharmacological compounds provided by industry that may intervene in filovirus-induced shock. Continue the assessment of the therapeutic action of compounds in mouse models of filovirus infection. Complete research for development of a variola animal model at CDC.
- 2500 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Continue preclinical virology studies (including animal efficacy studies) required for a supplemental New Drug Application for cidofovir and provide technical data and support to the drug license holder. Compare the variola animal model to the monkeypox animal model and human monkeypox to qualify models to be proposed under the FDA animal efficacy rule. Initiate development of an oral prodrug of cidofovir.

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**FY 2004 Planned Program (Cont):**

- 3900 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 botulinum neurotoxin (BoNT) receptor antagonists as therapeutic candidates. Establish a central database and compound repository.
- 1900 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Develop assays methodologies and drug formulations or prodrugs for analysis. Evaluate monoclonal antibodies to viral specific proteins for their ability to neutralize virus. Identify critical host-cell proteins integral to viral replication, viral budding, or viral entry. Generate 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 - Produce and purify milligram quantities of H25 antibody for a 4-liter scale spinner production. Determine functional and biophysical properties of the purified antibody. Confirm the utility and acceptability of the antibody produced from the cell lines for further product development. Develop analytical transfer methods and assays for monoclonal antibodies (MAbs) and heteropolymers (HPs) and conduct animal studies.
- 971 Therapeutics, Bacterial, Heteropolymer Technologies for Anthrax Immunity - Evaluate protective efficacy in rabbits exposed to lethal doses of aerosolized anthrax using the proprietary anthrax antibody, ETI-204. Assess the level of bacteremia in treated versus untreated animals.

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**FY 2004 Planned Program (Cont):**

- 2718 Therapeutics, Bacterial, Rapid Antibody-Based Biological Countermeasures - Develop diagnostic and therapeutic antibodies against anthrax and identify new targets associated with anthrax and plague pathology. Identify additional targets associated with anthrax and plague virulence and screen for novel antibodies to detect and protect against related bioweapons. Discover novel, validated protein targets. Develop diagnostic antibodies optimized for affinity and selectivity to biowarfare agents. Create a collection of human therapeutic antibodies for passive immunity protection against bioweapons and more effective treatment against pathogens and toxins.

**Total** 15571

**FY 2005 Planned Program:**

- 1498 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 BW threat agents.
- 2962 Therapeutics, Toxin - Develop surrogate endpoints of human clinical efficacy for SE therapeutics.
- 624 Therapeutics, Viral - Assess therapeutic action of pharmacological compounds provided by industry in mouse and non-human primate models of filovirus infection.
- 2400 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Complete preclinical virology studies (including animal efficacy studies) required for a supplemental New Drug Application for intravenous (IV) cidofovir. Continue evaluation of oral prodrug of cidofovir to determine its feasibility as a replacement for intravenous (IV) cidofovir.

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**FY 2005 Planned Program (Cont):**

- 2500 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Test combinations of human monoclonal antibodies against multiple BoNT serotypes in cell-based systems. Expand proof-of-concept for BoNT target rescue and replacement in cholinergic neurons.
- 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** 10984

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	6705	4068	4236

**FY 2003 Accomplishments:**

- 6705 Diagnostic Technologies - Applied new diagnostic approaches to the early recognition of infection, adapting the technologies to current and future comprehensive integrated diagnostic systems. Applied new technological approaches for diagnosis of potential biological warfare threat agents in laboratory and field studies using relevant clinical samples. Applied new technological approaches for concentrating and processing clinical samples to support rapid biological agent identification. Applied research reagents and associated assays for the detection of appropriate biological markers using relevant clinical samples.

**Total** 6705

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<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2468 Diagnostic Technologies - Continue 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. Continue laboratory and field studies using relevant clinical samples to apply new technological approaches for diagnosis of potential biological warfare threat agents. Continue 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.</li> <li>• 1600 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Develop laboratory-based test and evaluation standards for comparing similar diagnostic/detection assays and reagents. Elevate assays, previously handed off to advanced development, to consistent test and evaluation standards and prepare technical data packages for these assays/reagents.</li> </ul> <p><b>Total 4068</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2636 Diagnostic Technologies - Continue applying new diagnostic approaches to the early recognition of infections. Technologies will be adapted to current and future comprehensive integrated diagnostic systems. Continue applying new technological approaches for diagnosis of potential biological warfare threat agents in laboratory and field studies using clinical samples. Apply new technological approaches for processing clinical samples and apply research reagents and associated assays for the detection of appropriate biological markers using relevant clinical samples.</li> </ul>		
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**FY 2005 Planned Program (Cont):**

- 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** 4236

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vaccines	15611	19438	7402

**FY 2003 Accomplishments:**

- 350 Vaccines, Bacterial, Medical Countermeasures for Brucella (DTO CB31) - Determined whether over-expression of vaccine antigens in candidate live vaccines increases protective efficacy. Continued to develop and validate in vitro systems in mice and non-human primates to reliably quantify the intensity of potentially protective immune responses in animals vaccinated with live and subunit vaccines.
- 200 Vaccines, Viral, Medical Countermeasures for Encephalitis Viruses (DTO CB24) - Completed studies on production of the live attenuated Venezuelan equine encephalitis (VEE) virus vaccine constructs, their genetic stability, and their transmission potential as live attenuated viruses in competent vector mosquitoes.

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**FY 2003 Accomplishments (Cont):**

- 628 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Downselected formulations for intranasal, inhalational, and/or transdermal delivery of recombinant protein vaccines. Proposed commercial or proprietary devices for delivery of vaccines.
- 4583 Vaccines, Bacterial - Developed mutants in various agents for in vivo expressed genes to examine role in virulence. Characterized the mechanism(s) of vaccine resistance in selected strains of various agents. Determined mechanisms and correlates of protection with efficacious glanders vaccines. Completed evaluation of immunogenicity and efficacy of recombinant protective antigen (rPA) isoform species in the rabbit model; continued to develop reagent standards for use in an in vitro potency assay; and completed collection of immune serum for evaluation in non-human primates passive transfer study, all in support of rPA vaccine candidate entry into technology development. Completed development of anti-V antigen competitive enzyme-linked immunosorbent assay (ELISA) and cytotoxicity inhibition assays; completed determination of the range of protection of the vaccine candidate against other virulent strains of Y. pestis in animals; and completed studies in mice on alternate vaccine administration routes, dose, formulation and mucosal adjuvants, all in support of recombinant plague F1-V vaccine candidate entry into technology development.
- 3242 Vaccines, Viral - Assessed mechanism of immunity that protects against disease from filoviruses (Marburg and Ebola viruses) in vivo. Developed assays to measure markers to validate the efficacy of vaccine candidates in established model systems for filoviruses. Developed non-human primate models for western equine encephalitis virus (WEE).
- 1437 Vaccines - Evaluated additional vaccine candidates for delivery using the multiagent delivery platform. Developed virus constructs and obtained commercially produced humanized mouse monoclonal antibodies to evaluate protective immune responses. Investigated the potential of live vaccine candidate for bacterial threat agents.

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**FY 2003 Accomplishments (Cont):**

- 964 Vaccines, Needle-less Delivery Methods for Recombinant Protein Vaccines - Assessed novel, minimally invasive delivery technologies for the administration of protein subunit biodefense vaccine candidates, including rPA and recombinant staphylococcal enterotoxin B (rSEB) vaccines, and either rSEA vaccine or recombinant F1-V fusion protein plague vaccine.
- 2407 Vaccines, Organic Vaccine Production - Evaluate and determine the usefulness of methods/technologies to develop vaccines through alternative unconventional means.
- 1800 Vaccines, Toxin, Recombinant Ricin Vaccine (DTO CB46) - Completed efficacy studies in rodents on recombinant ricin toxin A-chain (rRTA) vaccine candidates and downselected to lead candidate and alternate. Performed scale up process development for lead rRTA vaccine candidate; conducted analytical test qualification for identity and stability studies of lead rRTA candidate; and developed a potency assay for rRTA vaccine candidates. Developed non-human primate model for testing lead vaccine candidate.

**Total** 15611

**FY 2004 Planned Program:**

- 3557 Vaccines, Bacterial - Complete the evaluation of potential subunit and live-attenuated glanders vaccine candidates in small animal models and prepare a technical data package summarizing the glanders vaccine research program. Perform preliminary studies toward development of an acellular brucella vaccine candidate. Continue to perform in vitro and in vivo studies to support advanced development of the rPA vaccine candidate.



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**FY 2004 Planned Program (Cont):**

- 1533 Vaccines, Toxin - Initiate studies on the ability of intact catalytic and translocation domains of botulinum neurotoxins (BoNT) to elicit protective immunity in animal models. Initiate studies to increase immunogenicity of recombinant BoNT heavy chain (Hc) subunit vaccine candidates by varying adjuvant and/or method of delivery. Continue developing in-process and release assays for recombinant BoNT Hc vaccine candidates. Qualify 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 - Investigate 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 ) - Initiate applied research to define correlates of immunity that protect against disease from alphaviruses (EEE and WEE viruses). Develop DNA and replicon-based vaccine constructs/platforms as western and eastern equine encephalitis (WEE/EEE) vaccine candidates.
- 1100 Vaccines, Viral, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Initiate development of animal models of aerosol infection with filoviruses. Initiate applied research to define correlates of immunity that protect against disease from filoviruses. Develop animal models for Ebola-Sudan virus. Conduct preliminary characterization of leading vaccine candidates.

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**FY 2004 Planned Program (Cont):**

- 1941 Vaccines, Needle-less Delivery Methods for Vaccines - Examine the potential for intradermal (ID) delivery to provide antigen dose-sparing benefits, faster seroconversion, and reduction or elimination of alum. Examine the safety and immunogenicity of the ID delivery of the anthrax rPA with or without alum adjuvant. Compare intramuscular (IM) injection with standard needles. Pursue further development of formulation technologies for rPA and rSEB providing improved shelf-life stability. Develop and test rapidly reconstituting rPA powders and systems for ID delivery in mouse challenge studies. Identify rapidly reconstituting formulations and delivery systems for the rSEB vaccine candidate.
- 8149 Vaccines, Viral, Multivalent Ebola, Marburg Filovirus Program - Develop 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 - Develop an oral combination vaccine against anthrax and plague using proprietary technology for attenuated live bacterial vaccines. Support preclinical animal testing of vaccine constructs developed for the oral combination vaccine against anthrax and plague.
- 1214 Vaccines, Bacterial, Novel Pharmaceuticals for Anthrax - Develop the Helinz-treated vaccine platform, with application in both cancer and infectious disease, including those agents that pose threats to bioterrorism.

**Total** 19438

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<p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3661 Vaccines, Bacterial - Continue to perform laboratory research (demonstrate surrogate efficacy, design and validate in vitro correlates of protection, and stability studies) to support development of lead vaccine candidates against plague (F1-V fusion antigen vaccine) and anthrax (rPA vaccine).</li> <li>• 1634 Vaccines, Toxin - Continue studies on the ability of intact catalytic and translocation domains of botulinum neurotoxins (BoNT) to elicit protective immunity in animal models. Continue studies to increase immunogenicity of existing recombinant BoNT vaccine candidates via adjuvants and/or delivery methods. Complete developing in-process and release assays for recombinant BoNT vaccine candidates. Continue recombinant ricin vaccine candidate stability testing. Develop surrogate endpoints of clinical efficacy in non-human primates for the candidate ricin vaccine. Test novel adjuvants with lead ricin vaccine candidate in vivo.</li> <li>• 907 Vaccines, Viral - Continue research studies investigating the effect on immunogenicity by the use of the oligonucleotide CpG as an adjuvant with live attenuated alphavirus vaccine candidates.</li> <li>• 500 Vaccines, Viral, 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. Initiate studies to establish an eastern equine encephalitis (EEE) virus non-human primate efficacy model.</li> <li>• 700 Vaccines, Viral, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Incorporate iterative improvements in vaccine candidates as determined from characterization studies and concurrent testing.</li> </ul> <p><b>Total 7402</b></p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Medical Biological Warfare Defense	0	7861	0

**FY 2004 Planned Program:**

- 3396 Medical Biological Warfare Defense, Global Pathogen Portal - Collect and collate genetic information about pathogens from the CDC and the National Institute of Allergy and Infectious Diseases "A", "B", and "C" lists of pathogens and their close relatives using a global pathogen portal bioinformatic software architecture.
- 2426 Medical Biological Warfare Defense, Vaccines and Therapeutics to Counter Biothreats - Conduct applied research to develop vaccines and therapeutics to counter BW threat agents.
- 2039 Medical Biological Warfare Defense, Advanced Emergency Medical Response - Conduct applied research toward development of advanced emergency medical response capabilities.

**Total**    7861

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	809	0

**FY 2004 Planned Program:**

- 809 SBIR - Small Business Innovative Research

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE                  (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
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**FY 2004 Planned Program (Cont):**  
**Total 809**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34677	45944	55621	39416	39440	42499	38625	Cont	Cont

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE          (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	18768	22143	18269	19936	20059	20354	21779	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 through application of pharmaceuticals for prevention and treatment of the toxic effects of nerve, blister, respiratory, and blood agents. This project supports applied research of prophylaxes, pretreatments, antidotes, skin decontaminants, and therapeutic drug compounds that have the potential to counteract the lethal, physical, and behavioral toxicities of chemical agents. It also supports development of medical chemical defense materiel that ensures adequate patient care, field resuscitation, and patient management procedures. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas (Nerve Agent Defense, Vesicant Agent Defense and Chemical Warfare Agent (CWA) Defense), and directed research efforts (Low Level CWA Exposure, Non-Traditional Agents (NTAs), and Mustard Gas Antidote).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Nerve Agent Defense	6095	8964	9391

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>

**FY 2003 Accomplishments:**

- 665 Nerve Agent Defense, Nerve Agent Anticonvulsants - Developed experimental protocol to evaluate drugs, drug combinations and drug treatment protocols with potential to control nerve agent-induced seizures. Evaluated ability of midazolam and anticholinergics to terminate nerve agent-induced seizures in a non-human primate model.
- 3530 Nerve Agent Defense, Biological Scavenger - Developed physiological pharmacokinetic models of CWAs. Evaluated the safety and circulatory stability of recombinant bioscavengers. Determined specific carbohydrate structures of human serum butyrylcholinesterase as reference material for Good Laboratory Practices (GLP) and current Good Manufacturing Practices (cGMP) production. Generated serum carboxylesterase-deficient mice for use in testing efficacy of nerve agent bioscavengers.
- 900 Nerve Agent Defense, Neuroprotection - Developed and tested neuroprotectant drugs to protect against status epilepticus following nerve agent exposure. Assessed alternate non-human primates as models for nerve agent toxicity and medical countermeasures.
- 1000 Nerve Agent Defense, Improved Oxime (DTO CB48) - Initiated chemical assay development to detect candidate oxime(s) for use against traditional nerve agents and NTAs in biological fluids, stability studies, and studies to identify and characterize a surrogate marker for efficacy, drawing from an array of promising compounds already identified.

**Total** 6095

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>

**FY 2004 Planned Program:**

- 634 Nerve Agent Defense, Nerve Agent Anticonvulsants - Determine efficacy of midazolam and anticholinergic drug combinations against seizures and lethality caused by nerve agents. Determine minimal amount of atropine needed to sustain survival in non-human primates exposed to nerve agent.
- 3601 Nerve Agent Defense, Biological Scavenger - Determine pharmacokinetics of CWAs and the impact of pretreatment in guinea pigs. Determine x-ray crystallographic structure of catalytic scavengers. Continue pretreatment intervention studies of vectors to deliver bioscavenger genes. Characterize animal models to test efficacy of nerve agent bioscavengers. Test physiologic pharmacokinetic model of CWAs.
- 729 Nerve Agent Defense, Neuroprotection - Test 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) - Continue 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.
- 3000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Determine the effects of NTAs on energy metabolism of cardiac cells and the effectiveness of decontamination on percutaneous NTAs. Conduct electrophysiological evaluation of cardiovascular, respiratory, muscular and cortical dysfunction.

**Total** 8964



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>

**FY 2005 Planned Program:**

- 600 Nerve Agent Defense, Nerve Agent Anticonvulsants - Define in vitro and in vivo models for study of improved nerve agent countermeasures.
- 3341 Nerve Agent Defense, Biological Scavenger - 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.
- 450 Nerve Agent Defense, Neuroprotection - Continue testing FDA-approved drugs shown to be neuroprotective in both anatomic and behavioral studies.
- 1000 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.
- 4000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Evaluate the effectiveness of anticonvulsants against seizures produced by NTAs, in vivo persistence of NTAs, and current medical countermeasures against NTAs. Conduct evaluation of respiratory dynamics and lung biochemistry.

**Total** 9391

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE                  (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vesicant Agent Defense	6074	8155	4000

**FY 2003 Accomplishments:**

- 1367 Vesicant Agent Defense, Vesicant Medical Countermeasures - Evaluated antagonists of apoptosis and the blockade of sulfur mustard (HD)-induced toxicity.
- 1684 Vesicant Agent Defense, Cutaneous Therapeutics - Evaluated new FDA-approved drugs for treatment of HD-induced ocular injury. Optimized formulation for an ocular rinse that treats HD-induced ocular injury.
- 1000 Vesicant Agent Defense, Medical Countermeasures for Vesicant Agents II (DTO CB30) - Identified therapeutic window for administering compounds to mitigate the effects of HD exposure. Evaluated combination therapies for HD exposure in animal models.
- 2023 Vesicant Agent Defense, Mustard Gas Antidote - Explored the use of free and liposome-encapsulated antioxidants as a medical countermeasure to HD exposure.

**Total**    6074

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>

**FY 2004 Planned Program:**

- 1662 Vesicant Agent Defense, Vesicant Medical Countermeasures - Conduct screening of candidate antivesicant compounds. Develop in vitro and in vivo models to support efficacy studies of new antivesicant countermeasures.
- 2127 Vesicant Agent Defense, Cutaneous Therapeutics - Identify candidate treatment strategies and collate findings in concert with medical experts and relevant research teams. Define in vitro/in vivo models, establish pathophysiological endpoints, and define cellular and tissue consequences of exposure.
- 4366 Vesicant Agent Defense, Mustard Gas Antidote - Enhance the effectiveness of Signal Transduction Inhibition Methodology Antioxidant Liposomes (STIMAL), also known as the Redox Regulating Liposome (RRL), by further product development. Elucidate the pathophysiology of mustard agents in previously developed in vitro and in vivo models. Explore additional modalities such as pharmacogenomically-based drugs and complement blockade. Complete initial efficacy studies of STIMAL against HD. Conduct detailed studies on the inhalation of mustards (bis-2-CEES) to determine if oxidative stress is a significant part of the pathophysiology.

**Total** 8155

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE                  (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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**FY 2005 Planned Program:**

- 2000 Vesicant Agent Defense, Vesicant Medical Countermeasures - Define pharmacological categories for points of intervention in vesicant injury process. Screen potential antivesicant compounds.
- 2000 Vesicant Agent Defense, Cutaneous Therapeutics - Characterize pathophysiological endpoints and continue elucidation of pathophysiological schema. Develop in vitro biological tissue assays. Identify additional potential intervention strategies.

**Total** 4000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Chemical Warfare Agent Defense	6599	4650	4878

**FY 2003 Accomplishments:**

- 659 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Evaluated several classes of compounds that behave by different mechanisms of action, to include methemoglobin formers and sulfur donors, to pursue development of cyanide pretreatment.
- 703 Chemical Warfare Agent Defense, Inhalation Therapeutics - Evaluated treatments for HD-induced pulmonary injury.
- 492 Chemical Warfare Agent Defense, Medical Diagnostics - Continued development of analytical methods to measure biological matrices (e.g., blood, urine, tissue) following CWA exposure. Developed confirmatory diagnostic capabilities and rapid screening technology for field applications. Pursued development of an ocular device for self-examination of pupillary response to nerve agent exposure.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 245 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Evaluated the toxicity of percutaneously applied organophosphorus compounds and the effectiveness of skin decontamination methods.</li> <li>• 2000 Chemical Warfare Agent Defense, Low Level CWA Exposure: Effects and Countermeasures (DTO CB51) - Assessed short-term behavioral, physiological, and neuropathological effects of sarin (GB) nerve agent in rodents following low-dose exposures for varying durations and their potential impact on human operational readiness.</li> <li>• 2500 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Evaluated cardiac toxicity following NTA exposure in cardiac muscle cells and animal models. Evaluated bioscavenger pretreatment as medical countermeasure against NTAs in guinea pigs.</li> </ul> <p><b>Total 6599</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 496 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Evaluate cyanide toxicity using an inhalation model. Investigate efficacy of sulfur donors and methemoglobin formers as cyanide pretreatment.</li> <li>• 731 Chemical Warfare Agent Defense, Inhalation Therapeutics - Screen clinically available drugs for potential efficacy against HD using the mouse model.</li> </ul>		
Project TC2/Line No: 015	Page 61 of 64 Pages	Exhibit R-2a (PE 0602384BP)

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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**FY 2004 Planned Program (Cont):**

- 486 Chemical Warfare Agent Defense, Medical Diagnostics - Initiate development of diagnostic applications for miniaturized mass spectrometer. Develop diagnostics that can be used to diagnose exposure via respiratory route. Refine analytical methods to measure scopolamine levels in blood and tissue. Investigate applicability of ocular device for self-examination of pupillary response.
- 237 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Pursue development of screening procedures for the evaluation of decontaminants using analytical techniques and animal models. Determine the extent that HD forms a reservoir in skin using pig and hairless guinea pig skin models.
- 2700 Chemical Warfare Agent Defense, Low Level CWA Exposure: Effects and Countermeasures (DTO CB51) - Assess 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. Initiate studies on the effects of current prophylactic and therapeutic treatments on the maximum tolerated dose for repeated CWA exposures and on other indices of chemical agent toxicity.

**Total** 4650

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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**FY 2005 Planned Program:**

- 500 Chemical Warfare Agent Defense, Cyanide Medical Countermeasures - Screen anti-cyanide compounds for efficacy.
- 500 Chemical Warfare Agent Defense, Inhalation Therapeutics - Test efficacious drugs in a modified inhalation therapy system.
- 500 Chemical Warfare Agent Defense, Medical Diagnostics - Continue development of diagnostic applications for miniaturized mass spectrometer.
- 678 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continue development of analytical and animal screening procedures for the evaluation of decontaminants and use them to screen for efficacy. Evaluate formulations designed to remove HD from reservoirs in the skin.
- 2700 Chemical Warfare Agent Defense, Low Level CWA Exposure: Effects and Countermeasures (DTO CB51) - Assess VX nerve agent and HD-induced changes in respiratory function produced by low-dose exposures of varying duration. 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 assessments of the effects of current CWA treatments on toxicity at low doses of exposure.

**Total** 4878

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	374	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE                  (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
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**FY 2004 Planned Program:**

- 374 SBIR - Small Business Innovative Research

**Total 374**

<b>C. <u>Other Program Funding Summary:</u></b>										
	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>	
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	11197	11045	13489	12534	12615	12808	13075	Cont	Cont	



**BUDGET ACTIVITY 3**  
**ADVANCED TECHNOLOGY DEVELOPMENT (ATD)**

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	105700	156496	117343	84778	89432	89810	86916	Continuing	Continuing
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	46712	93505	40527	25836	30838	31309	31957	Continuing	Continuing
CM3 HOMELAND DEFENSE (ATD)	2299	1794	2449	2429	2425	0	0	0	11396
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	10815	4208	5257	4563	4114	3194	3259	Continuing	Continuing
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34677	45944	55621	39416	39440	42499	38625	Continuing	Continuing
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	11197	11045	13489	12534	12615	12808	13075	Continuing	Continuing

<p>Line No: 033</p> <p align="center">Page 1 of 51 Pages</p> <p align="right">Exhibit R-2 (PE 0603384BP)</p>
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> This program element 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 non-medical 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 non-medical 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 NBC 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.</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>
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<b>B. <u>Program Change Summary:</u></b>		<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
Previous President's Budget (FY 2004 PB)		107763	103725	98843
Current Biennial Budget Estimates (FY 2005)		105700	156496	117343
Total Adjustments		-2063	52771	18500
a. Congressional General Reductions		0	-1679	0
b. Congressional Increases		0	70450	0
c. Reprogrammings		-280	0	0
d. SBIR/STTR Transfer		-1596	0	0
e. Other Adjustments		-187	0	18500

**Change Summary Explanation:**

**Funding:** FY04 - Congressional adjustment for CBD (+\$61,096K CB3; -\$3,505K TB3; -\$2,036K TC3).

FY05 - Realignment of funds due to reprioritization of programs within the Chemical Biological Defense Program to provide full funding of high priority developmental items (+\$7,500K CB3; +\$11,000K TB3).

**Schedule:**

**Technical:**

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	46712	93505	40527	25836	30838	31309	31957	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, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. This project funds the Joint Service Family of Decontamination Systems (JSFDS) program, the Joint Service Active Stand-off CW Detection System (ARTEMIS) program, the Joint Service Sensitive Equipment Decontamination (JSSED) Program, the Joint Biological Stand-off Detection System (JBSDS), the Joint Service Wide Area Detector (JSWAD), and Joint Operational Effects Federation (JOEF). Additionally, this program funds the Small Unit Biological Detector (SUBD), Consequence Management Interoperability Service (CMIS), and the Chemical Biological Individual Sampler (CBIS).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Testing and Trials	0	0	4500

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
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**FY 2005 Planned Program:**

- 3500 Support Additional TREs - Conduct technology readiness assessments on technologies transitioning from the applied research program to include consequence management technologies. Examples are decontamination solution formulations, stand-off chemical detection, chem-bio agent water monitor, chemical point detectors with TIC/TIM/NTA capabilities, and biological agent identifiers and triggers.
- 1000 Hot Lightweight Chemical Detector (LCD) - Characterize and assess the performance of a breadboard (heated inlet version of the UK fielded LCD) against NTAs and traditional agents. The breadboard assessment will be the basis for the design and build of a prototype. The performance of the prototype will be assessed for transition suitability to the acquisition program Joint Chemical Agent Detector (JCAD).

**Total** 4500

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	2922	8835	18900

**FY 2003 Accomplishments:**

- 1312 Lightweight Integrated CB Detection - Continued evaluation and development of DOE's micro chem lab to meet Joint Modular CB detector requirements.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1610 Point Detection, Detector Modifications - Completed and demonstrated standard operating procedures for enhanced wet chemistry test kits and aerosol collectors/samplers as a "quick fix" for new chemical targets. Complete laboratory modification of point detection systems to enhance performance against new chemical targets and transitioned data package to the Automated Chemical Agent Detector Alarm acquisition program.</li> </ul> <p><b>Total</b> 2922</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 400 Stand-off, Sensor Assessment Non-Traditional Agents (NTA) - Continue development of spectral database. Initiate enhancements of physics based performance models to include NTAs for the assessment of fielded and developmental systems to detect and identify NTAs.</li> <li>• 3420 Chemical/Biological Agent Water Monitor (DTO CB37) - Detection of Agent in Water - Initiate limited utility assessment to demonstrate technology. Develop assessment criteria and initiate a prototype design and build for the assessment.</li> <li>• 5015 Lightweight Integrated CB Detection (DTO CB50) - Complete evaluation and continued development of DOE's micro chem lab to include bio threats. Initiate the evaluation of the pyrolysis-GC-IMS system and a trade off study to downselect the appropriate system concept to meet the Joint Modular CB Detection requirements.</li> </ul> <p><b>Total</b> 8835</p>		
Project CB3/Line No: 033	Page 6 of 51 Pages	Exhibit R-2a (PE 0603384BP)



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
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**FY 2005 Planned Program:**

- 5900 Lightweight Integrated CB Detection (DTO CB50) - Downselect technologies to the best two or three approaches. Prepare design concepts based on these approaches.
- 3000 Stand-off Biological Aerosol Detection (DTO CB35) - Establish a series of field test to evaluate and demonstrate the capability to detect and discriminate biological vs non- biological agents.
- 6250 Chemical/Biological Agent Water Monitor (DTO CB37) - Detection of Agent in Water - Complete prototype build and assessment methodology.
- 1750 Point Detection, Biological Identification - Complete prototype build and assessment methodology.
- 2000 LISA Prototype - 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 additional work to transition technology into Chemical Unmanned Ground Reconnaissance (CUGR) ACTD.

**Total 18900**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	0	270	500

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
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**FY 2004 Planned Program:**

- 270 Individual Protection, Clothing Non Traditional Agent (NTA) - Identify appropriate simulant chemicals for NTA aerosols when testing protective clothing layers and systems. Determine the effects of water phase in protective clothing layers on protection against NTA simulants.

**Total** 270

**FY 2005 Planned Program:**

- 500 Individual Protection, Clothing Non-Traditional Agent (NTA) - Continue to identify appropriate simulant chemicals for NTAs aerosols when testing protective clothing layers and systems. Determine the effects of water phase in protective clothing layers on protection against NTA simulants.

**Total** 500

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	2992	900	2000

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**FY 2003 Accomplishments:**

- 598 Evaluation of Fielded Decontaminants Against NTAs - Completed stirred reactor studies on standard and emerging decontaminants against three NTAs. Conducted post decontamination contact hazard assessments for two NTAs. Conducted assessment studies on XE-555 resin and A-200 sorbent powder, used respectively in the M291 and M295 immediate decontamination kits, for two NTAs.
- 2394 Decontamination, Sensitive Equipment - Completed the JSSED interior decontamination analysis of alternatives (AoA), which has been staffed to and accepted by the Program Manager. Conducted field demonstration trials on thermal decontamination approaches in actual cargo aircraft. Conducted chamber trials using vapor phase hydrogen peroxide system for decontamination of interiors.

**Total** 2992

**FY 2004 Planned Program:**

- 900 Decontamination, Oxidative Formulation (DTO CB44) - Demonstrate products with existing applicator systems. Modify or develop alternative applicators. Conduct basic integration of products into a "simulated environment". Extend test bed to include multiple agents and NTAs. Conduct robust chamber studies using full-scale conceptual system testing with live agents.

**Total** 900

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CB3</b>
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**FY 2005 Planned Program:**

- 2000 Decontamination, Oxidative Formulation (DTO CB44) - Conduct safety, health and environmental studies. Complete live agent and applicator breadboard testing. Complete TRL 5/6 requirements.

**Total** 2000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Technology Systems	3066	4280	1400

**FY 2003 Accomplishments:**

- 2064 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Prepared for transition of the fighterbase and casualty modules to Joint Operational Effects Federation (JOEF) program to support Block I Demonstration. Completed the first phase of independent verification of software. Baselined RESTOP ACTD results as model validation. Delivered airbase representation module and generic airbase module to the Defense Threat Reduction Agency.
- 1002 Chemical and Biological Hazard Environment Prediction (DTO CB55) - Transitioned Vapor Liquid Solid Tracking (VLSTRACK) Version 3.1 capabilities to the JEM Block I and JOEF programs. Continued development of advanced predictive capabilities (MESO). Enhanced the ability to analyze transport and flows over complex terrain and around structures such as ships (enhancements included addressing biological agent slurry transport, dusty agent behavior, and complex agent sources and sinks).

**Total** 3066

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**FY 2004 Planned Program:**

- 1711 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Preparation for transition of the fighterbase and casualty modules to Joint Operational Effects Federation (JOEF) program to support Block I Demonstration. Complete the first phase of independent verification of software. Baseline RESTOP ACTD results as model validation. Deliver airbase representation module and generic airbase module to the Defense Threat Reduction Agency.
- 900 Planning, Training, and Analysis - Transition of STAFFS model to JOEF. Integration support putting NBC CREST and impact models into JOEF.
- 260 Chemical and Biological Hazard Environment Prediction (DTO CB55) - Transition advanced predictive capabilities (MESO) to JEM Block II program. Further enhance the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.
- 910 Simulation Based Acquisition - Initiate investigation of prototype software development requirements to meet performance specifications for a Virtual Prototyping System (VPS) that would support acquisition of CB defense end items to protect a variety of installations/facility types. If resources allow, and an affirmative decision is made, prototyping efforts would begin in this fiscal year.
- 499 Point Detection, Biological Identification - Initiate development of an automated system to populate a biomarkers database system based on Mass Spec analysis.

**Total** 4280

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**FY 2005 Planned Program:**

- 200 Chemical and Biological Hazard Environment Prediction (DTO CB55) - Transition advanced predictive capabilities (MESO) to JEM Block II program. Further enhance the complex terrain and flow around structures modeling capability to address effects of vegetation and surface scavenging.
- 500 Chemical and Biological Warfare Effects on Operations (DTO CB43) - Test and finalize toward JOEF transition Block 2. Develop Marine Expeditionary Force HQ, depot, and railhead modules. Perform internal V&V.
- 700 Simulation Based Acquisition - Complete prototype VPS and conduct a technology demonstration. Conduct analyses and studies to support a Milestone A determination for VPS.

**Total** 1400

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Advanced Tech Development	37732	77640	13227

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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 465 Fielded Decontamination Assessment, Non-Traditional Agent (NTA) - Completed assessment of fielded decon system for NTAs.</li> <li>• 900 Technical Readiness Evaluation - Conducted Technical Readiness Evaluations (TRE) of point and stand-off CB detection systems. Conducted contact hazard evaluations using NATO protocols. Conducted off-gas hazard evaluations using NATO/TTCP protocols.</li> <li>• 14412 Technical Transition - Developed an improved sample processing interface for UV Matrix Assisted Laser Desorption Ionization (MALDI) -Time Of Flight (TOF) mass spectrometer and incorporate into DARPA BioTOF device. Completed evaluation of upconverting phosphors for bio identification. Completed evaluation of anthrax-specific antibodies. Evaluated and refined catalytic oxidation filtration device. Initiated development of pathogen agents database with UV/IR MALDI and construct automated sample processing interface. Completed evaluation of Sandia foam for military decon. Completed development of sample handling interface for HANAA. Extended MAGIChip capability to address additional pathogen agents. Initiated assessment of additional technologies in detection, decontamination, and filtration from other government agencies.</li> <li>• 2119 Miniature Chemical and Biological Detectors - Developed a prototype with a miniaturized reader and self-contained disposable credit card sized cartridges containing a detection array, all necessary reagents and buffers, and the microfluidics to conduct specific assays. The technology is based on individually addressable polymer microspheres.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
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**FY 2003 Accomplishments (Cont):**

- 7406 Rapid Response Countermeasures to Biological and Chemical Threats - Continued studies to enhance public health and safety in the event of an animal or human based bioterrorism event; developed and demonstrated a wide area, real time human health monitoring and reporting database; continued to develop very rapid methods to detect biological threat agents on surfaces, in food and in water; continued studies into factors affecting biological toxicity of selected agents; initiated design study for antibody libraries; initiated photocatalytic air disinfection methods study; continued to investigate taggants using non standard DNA; began development of a small, high performance cooler for first responders.
- 2887 CBRN Threat Test Using Public/Private Assets (Sensor Net) - Designed an Information Technology Infrastructure for Comprehensive Incident Management. This will provide a common data pathway for homeland security sensors such as CBRNE, meteorology, and visual sensors.
- 1926 Bioterrorism/Agroterrorism Prediction and Risk Assessment - Initiated a predictive model to study of effects of a virus introduced to US native species (i.e., cattle).
- 3464 Advanced Chemical Detector - Explored and validated an advanced chemical threat agent detector.
- 1345 High Intensity Pulsed Radiation Facility for Chem-Bio Defense - Developed studies to understand the effects of radiation on biological materials as a method to neutralize the pathogenic effects without disrupting the cellular characteristics of the biological materials.
- 785 Stand-off Sensor Assessment, Non-Traditional Agents (NTA) - Established infrastructure to develop spectral signature. Developed spectral signature database. Assessed optical techniques to the detection of NTAs.



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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2023 Bioterrorism Defense and Advanced Sensors - Explored and validated the utility of advanced sensor technologies in combating bioterrorism.</li> </ul> <p><b>Total 37732</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2524 Chemical and Biological Detectors - Develop technologies for chemical and biological detectors.</li> <li>• 7272 Countermeasures to Biological and Chemical Threats Response - Explore and evaluate technologies for countermeasures to biological and chemical threats response.</li> <li>• 1979 Handheld Biological Agent Detection System - Evaluate technologies for handheld biological agent detection system.</li> <li>• 1188 Innovative Materials for MEMS Fabrication - Explore technologies for innovative materials for MEMS fabrication.</li> <li>• 2969 Immunochemical Bio/Chem Agent Detector - Develop and validate immunochemical biological and chemical agent detector technologies.</li> <li>• 6427 Bio-MEMS - Develop and validate bio-MEMS technologies.</li> <li>• 1979 Vaporized Hydrogen Peroxide Tech for Decontamination - Develop and validate vaporized hydrogen peroxide technologies for decontamination.</li> <li>• 2250 Technical Readiness Evaluation (TRE) - Conduct TREs of point and stand-off CB detection systems. Conduct stirred reactor, contact hazard, and off gas testing on emerging decontaminants not tested previously.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 9845 Technical Transition - Complete development of integrated UV MALDI-TOF and IR MALDI-TOF mass spectrometers. Complete catalytic oxidation filtration device. Complete evaluation of MAGIChip. Continue assessment of technologies in detection, decontamination, and filtration from other government agency programs.
- 1979 Rapid Response Database Center - Develop and validate rapid response database.
- 4848 Reactive Air Purification - Explore reactive air purification technologies.
- 1979 High Intensity Pulsed Radiation Facility for CB Agent Defeat - Explore technologies for a high intensity pulsed radiation facility for CB agent defeat.
- 6677 Sensor Net/CBRN Threat using Public and Private Assets - Develop and validate technologies for sensor net/CBRN threat using public and private assets.
- 990 Rapid Response Sensor Networking - Evaluate technologies for rapid response sensor networking.
- 24734 Chem-Bio Defense Initiative - Develop multiple technologies and methodologies for the rapid detection of, and protection from biological agents utilizing both point and stand-off platforms.

**Total** 77640

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**FY 2005 Planned Program:**

- 9847 Technical Transition - 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.
- 2380 Technical Readiness Evaluation - Conduct Technology Readiness Evaluations (TRE) of point and stand-off CB detection systems. Conduct stirred reactor, contact hazard and off gas testing on emerging decontaminants not tested previously.
- 1000 Stand-off, Sensor Assessment Non-Traditional Agent (NTA) - 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. The assessment will be used to develop a cost-benefit analysis on the value and potential to upgrade either fielded or developmental systems to detect and identify NTAs.

**Total** 13227

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	1580	0

**FY 2004 Planned Program:**

- 1580 SBIR - Small Business Innovative Research

**Total** 1580

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<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
BJ4 BIOLOGICAL DEFENSE (ACD&P)	3408	0	0	0	0	0	0	0	3408
CA4 CONTAMINATION AVOIDANCE (ACD&P)	22084	22642	14938	2494	2495	12493	2503	Cont	Cont
CO4 COLLECTIVE PROTECTION (ACD&P)	1781	0	0	0	0	0	0	0	1781
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	10815	4208	5257	4563	4114	3194	3259	Cont	Cont
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	12463	14836	17075	24313	25462	26059	26633	Cont	Cont
DE4 DECONTAMINATION SYSTEMS (ACD&P)	6480	24462	17886	6798	3872	0	6696	Cont	Cont
IP4 INDIVIDUAL PROTECTION (ACD&P)	3300	0	0	0	0	0	0	0	3300

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>				PROJECT <b>CM3</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CM3 HOMELAND DEFENSE (ATD)	2299	1794	2449	2429	2425	0	0	0	11396

**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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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CM3</b>
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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**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	2299	1764	2449

**FY 2003 Accomplishments:**

- 1300 WMD CST - Initiated evaluation of commercially produced level A and B suit ensembles being used by the National Guard Bureau (NGB) WMD-CST and the United States Army Reserve (USAR) Reconnaissance and Decontamination Platoons.
- 999 WMD CST - Initiated a joint evaluation with the Navy and Air Force to assess capabilities to meet the NGB WMD-CST Analytical Laboratory System (ALS) Block I requirements.

**Total** 2299

**FY 2004 Planned Program:**

- 1365 WMD CST - Continue to evaluate Chemical / Biological detection / identification technologies for insertion into WMD CST Tables of Distribution and Allowances (TDA).

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**FY 2004 Planned Program (Cont):**

- 399 WMD CST - Develop modifications to commercial systems and technologies in response to specific WMD CST operational requirements.

**Total** 1764

**FY 2005 Planned Program:**

- 1449 WMD CST - Continue evaluation and testing of new commercial products being considered in response to WMD CST requirements.
- 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** 2449

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	30	0

**FY 2004 Planned Program:**

- 30 SBIR - Small Business Innovative Research

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**FY 2004 Planned Program (Cont):**  
**Total      30**

<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
CA4 CONTAMINATION AVOIDANCE (ACD&P)	22084	22642	14938	2494	2495	12493	2503	Cont	Cont
CM5 HOMELAND DEFENSE (SDD)	956	5974	24274	389	0	0	0	0	31593
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1520	1558	1568	1555	1552	0	0	0	7753
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	14055	8793	0	0	0	0	0	0	22848

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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	10815	4208	5257	4563	4114	3194	3259	Continuing	Continuing

**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 Restoration of Operations (RestOps) and Contamination Avoidance at Seaport of Debarkation (CASPOD) in addition to Joint Warfighter Experiments (JWE).

**B. Accomplishments/Planned Program**

	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
ACTD Planning and Development	1745	2822	5257

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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1745 ACTD-PD - Evaluated FY04 and FY05 ACTD candidates. Supported the evaluation of the Large Frame Aircraft Decontamination Demonstration for RestOps ACTD. Supported the completion of transition planning for RestOps ACTD.</li> </ul> <p><b>Total 1745</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 500 CASPOD - Developed test techniques, tactics, and procedures (TTP) for the use of the CASPOD ACTD technologies. Acquired test equipment, provided test participants and evaluators. Developed environmental compliance documentation for tests and preliminary demonstration.</li> <li>• 2322 ACTD-PD - Perform technology demonstrations and maturity evaluation on Contaminated Surface Detector (CSD) in preparation for the CUGR ACTD in FY05.</li> </ul> <p><b>Total 2822</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3757 ACTD-PD - Initiate technology maturity evaluations for selection of technologies for future ACTD candidates.</li> <li>• 1500 ACTD-PD - Initiate planning for ACTD candidates, explore potential CONOPS with ACTD candidates technologies.</li> </ul> <p><b>Total 5257</b></p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ACTD Development and Demonstration	5567	1315	0

**FY 2003 Accomplishments:**

- 2189 RestOps - Conducted RestOps ACTD lessons learned study and completed report on RestOps ACTD. Initiated transition planning for technology acquisition from the RestOps ACTD.
- 1986 CASPOD - Performed technical testing of technologies for the CASPOD ACTD.
- 867 CASPOD - Developed test techniques, tactics, and procedures (TTP) for the use of the CASPOD ACTD technologies. Acquired test equipment, provided test participants and evaluators. Developed environmental compliance documentation for tests and preliminary demonstration.
- 525 RestOps - Performed Large Frame Aircraft Decontamination Demonstration (LFADD) project.

**Total** 5567

**FY 2004 Planned Program:**

- 1315 ACTD-PD - Develop CONOPS and procedures for Biological Warfare fusion cell for the Biological Warfare Countermeasures Initiative (BWCI) Counter Bio project in preparation for United States Pacific Command (PACOM) FY05 demonstration.

**Total** 1315

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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ACTD PLANNING AND DEVELOPMENT	3503	0	0

**FY 2003 Accomplishments:**

- 3503 RESTOPS - Completed evaluation of technologies in final demonstration. Transition continues in FY04 to CP4 for residual support projects.

**Total** 3503

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	71	0

**FY 2004 Planned Program:**

- 71 SBIR - Small Business Innovative Research

**Total** 71

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>CP3</b>
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**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	12463	14836	17075	24313	25462	26059	26633	Cont	Cont

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34677	45944	55621	39416	39440	42499	38625	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 (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines), directed research efforts; and efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	6740	10063	18537

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2003 Accomplishments:**

- 910 Therapeutics, Bacterial - Conducted comparative assessment for safety and efficacy of immunomodulators and other types of broad-spectrum compounds against multiple bacterial threat agents.
- 3888 Therapeutics, Toxin - Prepared sufficient amounts of lead inhibitors of botulinum toxin and staphylococcal enterotoxin B (SEB) intoxication for testing ex vivo or in vivo. Evaluated feasibility of drugs approved by FDA for septic shock as adjunct SE therapeutics using in vitro assays.
- 1742 Therapeutics, Viral - Evaluated the combined approach of antiviral drug therapy and immunotherapy in treatment of disease from filoviruses and further characterized three new antiviral targets against Ebola. Continued evaluating formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox viruses.
- 200 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Began assessment and development of a clinical study site where sufficient monkeypox exists naturally in order to characterize the clinical course and pathogenesis of monkeypox.

**Total** 6740

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2004 Planned Program:**

- 1420 Therapeutics, Bacterial - Continue the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in small animal models.
- 3520 Therapeutics, Toxin - Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for SE intoxication. Test FDA-approved drugs for septic shock as adjunct SE therapeutics in vivo.
- 1323 Therapeutics, Viral - Complete the evaluation of one antiviral drug formulation for orthopox viruses. Continue evaluating second drug formulation or prodrugs for orthopox viruses.
- 400 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Complete the assessment of the clinical study site to determine feasibility for use in a field trial of cidofovir to treat human monkeypox. Complete 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) - 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 neurotoxin (BoNT) intoxication.
- 800 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determine the basis for the pathogenesis of filovirus-induced shock or toxemia in animal models and identify potential mediators.

**Total** 10063



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2005 Planned Program:**

- 3090 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.
- 6208 Therapeutics, Toxin - Conduct proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of SEs. Enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.
- 2329 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. Continue evaluating new drug formulations or prodrugs for orthopox viruses. Enhance aerobiology capabilities and animal model development to facilitate viral therapeutics research.
- 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.
- 4430 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Continue to evaluate high affinity recombinant human antibodies against 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) - Identify and test leading antiviral technology candidates in appropriate animal model systems.

**Total** 18537

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	4035	4463	14104

**FY 2003 Accomplishments:**

- 2435 Diagnostic Technologies - Continued comparing alternative diagnostic technologies in laboratory-based and field-based studies prior to transition to the field medical laboratory. Compared overlapping diagnostic technologies that can be integrated into a single comprehensive platform capable of 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 Joint Biological Agent Identification and Diagnostic System (JBAIDS) acquisition program.
- 1600 Diagnostic Technologies, Improved Immunodiagnostic Platform (DTO CB47) - Identified immunodiagnostic technology options offering performance and design characteristics capable of addressing operational requirements of the JBAIDS acquisition program. Demonstrated technical capability for detection of at least three biological agents (including toxins) in three biological matrices within two hours with the immunodiagnostic technology options. Conducted comparative laboratory evaluation trial of the immunodiagnostic technology options and identified top performing immunodiagnostic platform based on results of the laboratory evaluation trial.

**Total**    4035

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2004 Planned Program:**

- 1163 Diagnostic Technologies - Continue to compare alternative diagnostic technologies in laboratory-based and field-based studies prior to transition to the field medical laboratory. Continue 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. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS acquisition program.
- 2100 Diagnostic Technologies, Improved Immunodiagnosics Platform (DTO CB47) - Complete interlaboratory evaluation of top performing immunodiagnostic technology option. Perform a multi-center evaluation trial of the top performing immunodiagnostic platform and prepare a technical data package detailing results of the multi-center trial. Recommend immunodiagnostic technologies for incorporation into JBAIDS acquisition program.
- 1200 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Develop a technical data package format for delivering assays and reagents, in concert with the advanced developer.

**Total** 4463

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
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**FY 2005 Planned Program:**

- 7659 Diagnostic Technologies - Continue to compare alternative diagnostic technologies in laboratory-based and field-based studies prior to transition to the field medical laboratory. 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 in laboratory-based and field-based studies using a combination of appropriate technologies. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS acquisition program. Analyze clinical samples obtained from human vaccinees 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.
- 5000 Diagnostics Technologies, IT Medical Surveillance - Demonstrate how to integrate medical surveillance information and potential CB threat agent information obtained through medical surveillance, with non-medical detection information; and work toward defining a draft Concept of Operations (CONOPS) for the application of these technologies.

**Total** 14104

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vaccines	10167	9865	12980

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1700 Vaccines, Bacterial, Medical Countermeasures for Brucella (DTO CB31) - Demonstrated effectiveness of candidate vaccine in non-human primate challenge model for protective efficacy against a single pathogenic Brucella species. Collected information for preparation of a technical data package supporting transition of the live, attenuated Brucella vaccine candidate out of technology base.</li> <li>• 800 Vaccines, Viral, Medical Countermeasures for Encephalitis Viruses (DTO CB24) - Demonstrated that the lead Venezuelan equine encephalitis (VEE) vaccine candidate, V3526, induced protection against the three VEE virus subtypes of concern (IA/B, IE, and IIIA), which would significantly reduce the complexity of a multivalent VEE vaccine. Completed analyses of the stability, safety, and efficacy (potency) of V3526 in mouse and non-human primate models. Determined the surrogate protection marker to be serum-neutralizing antibody in the non-human primate model. Completed the technical data package for the V3526 vaccine candidate and handed it off to the advanced developer.</li> <li>• 1102 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Performed initial efficacy studies for single recombinant protein delivered by alternate route(s). Proposed monovalent vaccine formulations for intranasal, inhalational, and/or transdermal delivery systems. Proposed in vitro correlate of immunity for surrogate endpoint of clinical efficacy.</li> <li>• 1000 Vaccines, Bacterial, Recombinant Plague Vaccine Candidate (DTO CB34) - Continued expanded studies in non-human primates for immunogenicity and efficacy and downselected the best non-human primate model. Continued studies to optimize vaccine production and formulation to support entry of the vaccine candidate into component advanced development. Completed a revised technical data package based on completed studies, to facilitate transition of the vaccine candidate out of technology base.</li> </ul>		
Project TB3/Line No: 033	Page 35 of 51 Pages	Exhibit R-2a (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2003 Accomplishments (Cont):**

- 1749 Vaccines, Bacterial - Initiated a comparison of the safe and most efficacious vaccine candidates against select agent exposures. Analyzed study data to determine best glanders vaccine candidate(s). Incorporated data for Brucella and plague vaccine candidates into technical data packages. Continued assay support and studies on adjuvants and formulations in support of rPA and recombinant plague F1-V vaccine candidates progress through component advanced development; continued to evaluate the efficacy of rPA immunity against B. anthracis strains of diverse geographic origins; and continued long-term rPA efficacy studies in rabbits and non-human primates.
- 555 Vaccines, Toxin - Completed the scale up process development of botulinum toxin serotype C vaccine candidate. Conducted process development work for botulinum toxin serotypes D and G vaccine candidates in the Pichia yeast expression system.
- 1815 Vaccines, Viral - Tested promising vaccine strategies in non-human primates for the ability to protect against filoviruses (Marburg and Ebola viruses). Continued research studies for the development of vaccine candidates for eastern and western equine encephalitis virus (EEE and WEE).
- 1446 Vaccines, Vaccine Stabilization - Developed chemical and physical methods to detect molecular changes in various candidate biodefense vaccine platforms and constructs that are responsible for loss of antigenicity at elevated temperatures. Confirmed that these changes confer the loss of vaccine activity under storage and shipping conditions. Developed accelerated stability high-throughput assays based upon these molecular changes found to be responsible for the vaccine's loss of antigenicity. Conducted screening of vaccine excipients for stabilization of proteins and viral particles.

**Total** 10167

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b> PROJECT <b>TB3</b>	
<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2113 Vaccines, Bacterial - Continue to perform animal studies which support transition of potential Brucella vaccine candidates to advanced development. Perform studies to address the mechanism of protective cellular immunity induced by selected vaccine candidates. Continue studies supporting rPA and recombinant plague F1-V vaccine candidates clinical trials and progress toward licensure. Complete developmental work on the mouse potency assay in support of rPA vaccine candidate advanced development.</li> <li>• 252 Vaccines, Toxin - Produce and characterize inactivated BoNT light chain vaccine candidates and large-scale truncations of BoNT holotoxins. Clone and express existing BoNT vaccine candidates using selected plant-based expression systems. Initiate studies exploring multivalent vaccine technologies for protection against multiple botulinum neurotoxin serotypes.</li> <li>• 1800 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Propose formulation/device/route for delivery of combinations of multiple recombinant proteins. Perform definitive efficacy studies on monovalent vaccine in second animal model. Evaluate in vitro correlate of immunity.</li> <li>• 2100 Vaccines, Toxin, Recombinant Ricin Vaccine (DTO CB46) - Complete toxicity assays, activity assays, and rodent efficacy studies for lead recombinant ricin toxin A-chain (rRTA) vaccine candidates. Conduct laboratory stability studies of the lead rRTA candidate. Evaluate lead candidate with in vitro models for vascular leak syndrome. Conduct efficacy studies in non-human primates with the lead rRTA vaccine candidate.</li> </ul>		
Project TB3/Line No: 033	Page 37 of 51 Pages	Exhibit R-2a (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>

**FY 2004 Planned Program (Cont):**

- 2900 Vaccines, Viral, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Initiate 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. Continue research for the development of live attenuated mutant viruses as vaccine candidates for EEE virus infection. Establish 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) - Develop and improve animal models for evaluating vaccine candidates for protection against Ebola and Marburg viruses.

**Total** 9865

**FY 2005 Planned Program:**

- 2928 Vaccines, Bacterial - Continue to perform animal studies which support development of selected vaccine candidates against bacterial threat agents. Continue technology base studies in support of the development and eventual FDA licensure of the rPA and recombinant plague F1-V vaccine candidates. Enhance aerobiology capabilities and animal model development to facilitate research toward the development of bacterial vaccines.
- 1617 Vaccines, Toxin - Initiate evaluation of inactivated BoNT light chain vaccine candidates as well as large-scale truncations of BoNT holotoxins in animal models. Continue studies on multivalent vaccine candidates to protect against multiple BoNT serotypes, including cloning and expression of genes for novel multivalent vaccine candidates. Enhance aerobiology capabilities and animal model development to facilitate research toward the development of toxin vaccines.



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
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**FY 2005 Planned Program (Cont):**

- 500 Vaccines, Viral - Enhance aerobiology capabilities and animal model development to facilitate research toward the development of viral vaccines.
- 1890 Vaccines, Alternative 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 Vaccines, Toxin, Recombinant Ricin Vaccine (DTO CB46) - Complete a comprehensive review of results with lead candidate, including potency, efficacy, adjuvant studies, toxicity, and pathology results in rodents. Complete efficacy studies and evaluate pathology in non-human primates with the lead vaccine candidate.
- 3070 Vaccines, Viral, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Continue evaluating the short-term efficacy of various vaccine platforms and constructs in available animal models. Determine the compatibility of selected vaccine platforms/constructs with Venezuelan equine encephalitis (VEE) vaccine candidate V3526.
- 1295 Vaccines, Viral, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Test leading vaccine candidates in worst-case scenarios (viral challenge dose, route, pre-existing vector immunity, and variation in viral challenge strain).

**Total** 12980

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DARPA Transition	12000	16700	10000

**FY 2003 Accomplishments:**

- 12000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Continued expansion and definition of medical biological defense technologies transitioned from the DARPA. Completed lead optimization of a small molecule antibiotic, completed in vitro and in vivo safety and efficacy studies, and continued IND enabling studies. Developed two additional B-cell lines and extended the B-cell based diagnostic sensor technology to include toxin agents. Evaluated superantigen toxin antagonists in vitro assays. Used plant expression vectors to create transgenic whole-plant systems expressing plague vaccine antigens. Produced monoclonal antibodies directed against Ebola virus in transgenic plants (plantibodies). Optimized two classes of bacterial RNA-binding compounds with broad-spectrum antimicrobial activity. Applied DNA shuffling technology to identify novel antigens that show protection in mice against at least two encephalitic alphaviruses. Identified and evaluated biomarkers for protection by a synthetic lipid A analog (aminoalkyl glucosaminide 4-phosphate) in mouse and non-human primate models. Developed small molecular structures that inhibit botulinum neurotoxin A (BoNT A) at nanomolar concentrations. Completed mechanism of action and lead optimization studies of a new class of antibiotics that target DNA-methylation in anthrax.

**Total 12000**

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TB3</b>
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**FY 2004 Planned Program:**

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

**Total** 16700

**FY 2005 Planned Program:**

- 10000 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. Develop five additional B-cell lines and complete development and performance testing of a 16-channel B-cell based diagnostic sensor. Establish formulation for an orally bioavailable superantigen toxin antagonist.

**Total** 10000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Medical Biological Warfare Defense	1735	4076	0

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**FY 2003 Accomplishments:**

- 1735 Medical Biological Warfare Defense, Bioadhesion Research to Combat Biological Warfare - Generated recombinant anthrax antigens, native protective antigen, lethal factor, and capsular antigens and developed conjugated vaccine formulations. Constructed covalent conjugates and nanoparticles displaying various combinations of anthrax antigens and determined immunogenicity in animals. Conjugated various combinations of anthrax toxins and capsular materials and determined the optimal conjugate for generating protective immune responses.

**Total** 1735

**FY 2004 Planned Program:**

- 4076 Medical Biological Warfare Defense, Bioadhesion Research to Combat Biological Warfare - Continue to generate recombinant anthrax antigens, native protective antigen, lethal factor, and capsular antigens and continue to develop conjugated vaccine formulations. Continue to construct covalent conjugates and nanoparticles displaying various combinations of anthrax antigens and determine immunogenicity in animals. Continue to conjugate various combinations of anthrax toxins and capsular materials and determine the optimal conjugate for generating protective immune responses.

**Total** 4076

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	777	0

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**FY 2004 Planned Program:**

- 777 SBIR - Small Business Innovative Research

**Total 777**

<b>C. <u>Other Program Funding Summary:</u></b>								<b><u>To</u></b>	<b><u>Total</u></b>
	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>Compl</u></b>	<b><u>Cost</u></b>
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	36057	64743	34968	45128	38518	18788	9553	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	34819	7264	7810	3643	14930	58935	71855	Cont	Cont

Project TB3/Line No: 033

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Exhibit R-2a (PE 0603384BP)

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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	11197	11045	13489	12534	12615	12808	13075	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 (Nerve Agent Defense, Vesicant Agent Defense and Chemical Warfare Agent (CWA) Defense), and directed research efforts (Low Level CWA Exposure and Non-Traditional Agents(NTAs)).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Nerve Agent Defense	4268	9092	9657

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 980 Nerve Agent Defense, Nerve Agent Anticonvulsants - Selected optimal anticholinergic drug for inclusion with midazolam anticonvulsant and established optimal treatment protocol in non-human primates.</li> <li>• 2088 Nerve Agent Defense, Biological Scavenger - Completed physiological pharmacokinetic model studies of expected human efficacy with various bioscavengers. Verified adequacy of transgenic animal model to produce recombinant enzyme scavenger.</li> <li>• 1200 Nerve Agent Defense, Improved Oxime (DTO CB48) - Conducted efficacy studies of candidate oxime(s) against traditional nerve agents and non-traditional agents (NTAs) in guinea pigs. Initiated down selection process. Synthesized appropriate quantities of each oxime for required studies.</li> </ul> <p><b>Total</b> 4268</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 662 Nerve Agent Defense, Nerve Agent Anticonvulsants - Determine efficacy of midazolam anticonvulsant and anticholinergic drug combinations against seizures and lethality produced by all current threat agents in the guinea pig model.</li> <li>• 2610 Nerve Agent Defense, Biological Scavenger - Initiate evaluation of human protein recombinant scavenger. Utilize transgenic animal model to produce adequate amounts of recombinant enzyme scavenger for preclinical testing.</li> <li>• 520 Nerve Agent Defense, Neuroprotection - Assess potential neuroprotectant treatments for nerve agent-induced brain pathology in guinea pig model.</li> </ul>		
Project TC3/Line No: 033	Page 45 of 51 Pages	Exhibit R-2a (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
<b>FY 2004 Planned Program (Cont):</b>		
<ul style="list-style-type: none"> <li>• 4300 Nerve Agent Defense, Improved Oxime (DTO CB48) - Initiate 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. Continue the down selection process.</li> <li>• 1000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Evaluate the efficacy of candidate bioscavengers for protection against non-traditional nerve agents in multiple animal models.</li> </ul>		
<b>Total 9092</b>		
<b>FY 2005 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 750 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.</li> <li>• 3107 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.</li> <li>• 300 Nerve Agent Defense, Neuroprotection - Initiate PK evaluations of selected neuroprotectants.</li> <li>• 5500 Nerve Agent Defense, Improved Oxime (DTO CB48) - Complete efficacy, safety/toxicity and PK studies of candidate oxime(s) for use against traditional nerve agents and NTAs. Down select the leading candidate oxime(s). Prepare a technical data package that supports FDA requirements for an IND application and for transition of the best improved, broad-spectrum candidate oxime(s) out of the technology base.</li> </ul>		
<b>Total 9657</b>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vesicant Agent Defense	4860	717	1832

**FY 2003 Accomplishments:**

- 338 Vesicant Agent Defense, Vesicant Medical Countermeasures - Completed preclinical studies of selected vesicant therapy candidate compounds.
- 522 Vesicant Agent Defense, Cutaneous Therapeutics - Evaluated commercially licensed wound healing medical therapeutics for sulfur mustard (HD)-induced injuries.
- 4000 Vesicant Agent Defense, Medical Countermeasures for Vesicant Agents II (DTO CB30) - Completed preclinical safety and efficacy studies of selected vesicant countermeasure candidate compounds. Completed PK studies of vesicant countermeasure candidates. Performed additional studies necessary to completely characterize candidate therapy. Initiated preparation of a technical data package to support FDA requirements for an IND application.

**Total** 4860

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
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**FY 2004 Planned Program:**

- 334 Vesicant Agent Defense, Vesicant Medical Countermeasures - Pursue development of protective agent against HD-induced skin lesions.
- 383 Vesicant Agent Defense, Cutaneous Therapeutics - Begin efficacy tests of promising treatment strategies.

**Total** 717

**FY 2005 Planned Program:**

- 1300 Vesicant Agent Defense, Vesicant Medical Countermeasures - Initiate PK evaluations of selected antivesicants.
- 532 Vesicant Agent Defense, Cutaneous Therapeutics - Continue screening of promising treatment strategies, and prioritize successful strategies for further in-depth study.

**Total** 1832

	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
Chemical Warfare Agent Defense	2069	1049	2000

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 730 Chemical Warfare Agent Defense, Inhalation Therapeutics - Evaluated therapeutic agents for pulmonary edema produced by whole-body exposure to CWAs in animal models.</li> <li>• 245 Chemical Warfare Agent Defense, Medical Diagnostics - Evaluated hand-held cholinesterase monitor for clinical use.</li> <li>• 294 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Pursued development of polyurethane immobilized cholinesterases and chemical agent hydrolyzing enzymes as skin and wound decontaminants for organophosphate CWAs. Developed protocols supporting the sponge decontamination concept and the detoxification of medically sensitive skin project. Evaluated formulations for efficacy.</li> <li>• 800 Chemical Warfare Agent Defense, Non-Traditional Agents (NTAs) - Compared all nerve agents for induction of neurochemical changes. Evaluated efficacy of anticonvulsants against NTAs. Evaluated current nerve agent medical decontamination procedures against percutaneous NTAs.</li> </ul> <p><b>Total</b> 2069</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 314 Chemical Warfare Agent Defense, Medical Diagnostics - Develop and test a non-invasive prototype instrument that measures blood gases via finger, ear, or toe.</li> <li>• 435 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continue development of skin and wound decontaminants for organophosphate CWAs. Continue to expand decontamination and detoxification efforts by developing HD decontaminants.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
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**FY 2004 Planned Program (Cont):**

- 300 Chemical Warfare Agent Defense, Low Level CWA Exposure - Evaluate 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** 1049

**FY 2005 Planned Program:**

- 400 Chemical Warfare Agent Defense, Medical Diagnostics - Continue testing devices that measure blood gases via finger, ear, or toe.
- 300 Chemical Warfare Agent Defense, Skin and Wound Decontamination - Continue development of concepts for nerve agent and HD skin and wound decontamination.
- 1300 Chemical Warfare Agent Defense, Low Level CWA 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** 2000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	187	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>	PROJECT <b>TC3</b>
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**FY 2004 Planned Program:**

- 187 SBIR - Small Business Innovative Research

**Total 187**

<b>C. <u>Other Program Funding Summary:</u></b>								<b><u>To</u></b> <b><u>Compl</u></b>	<b><u>Total</u></b> <b><u>Cost</u></b>
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	Cont	Cont
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1642	3760	14780	4499	4539	4564	4614	Cont	Cont

Project TC3/Line No: 033

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

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	91567	131433	104195	85825	74886	61904	49999	Continuing	Continuing
BJ4 BIOLOGICAL DEFENSE (ACD&P)	3408	0	0	0	0	0	0	0	3408
CA4 CONTAMINATION AVOIDANCE (ACD&P)	22084	22642	14938	2494	2495	12493	2503	Continuing	Continuing
CM4 HOMELAND DEFENSE (ACD&P)	966	990	0	2593	0	0	0	0	4549
CO4 COLLECTIVE PROTECTION (ACD&P)	1781	0	0	0	0	0	0	0	1781
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	12463	14836	17075	24313	25462	26059	26633	Continuing	Continuing
DE4 DECONTAMINATION SYSTEMS (ACD&P)	6480	24462	17886	6798	3872	0	6696	Continuing	Continuing
HS4 HOMELAND SECURITY (ACD&P)	3386	0	0	0	0	0	0	0	3386
IP4 INDIVIDUAL PROTECTION (ACD&P)	3300	0	0	0	0	0	0	0	3300
IS4 INFORMATION SYTEMS (ACD&P)	0	0	4548	0	0	0	0	0	4548
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	36057	64743	34968	45128	38518	18788	9553	Continuing	Continuing
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	1642	3760	14780	4499	4539	4564	4614	Continuing	Continuing

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> 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 and Prototype (ACD&amp;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&amp;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&amp;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&amp;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&amp;P in the areas of Non-Traditional Agents and chemical/biological defense equipment and is correctly placed in Budget Activity 4.</p>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>
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<b>B. <u>Program Change Summary:</u></b>		<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>
Previous President's Budget (FY 2004 PB)		89925	162142	79195
Current Biennial Budget Estimates (FY 2005)		91567	131433	104195
Total Adjustments		1642	-30709	25000
a. Congressional General Reductions		0	-1409	0
b. Congressional Increases		0	-29300	0
c. Reprogrammings		-256	0	0
d. SBIR/STTR Transfer		-1319	0	0
e. Other Adjustments		3217	0	25000

**Change Summary Explanation:**

**Funding:** FY04 - Congressional adjustment for CBD (-\$9,300K CA4; +\$1,000K CM4; -\$5,000K CO4; -\$5,623K CP4; -\$3,526K DE4; -\$5,853 MB4; -\$998K MC4).

FY04/05 - Realignment of funds due to reprioritization of programs within the Chemical Biological Defense Program to provide full funding of high priority developmental items (FY04 -\$3,252K, FY05 +\$7,452K CA4; FY05 +\$2,000K CP4; FY05 +\$4,548K IS4; FY04 -\$1,748K, FY05 +\$6,000K MB4; FY05 +\$5,000K MC4).

**Schedule:**

**Technical:**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) BJ4</b>	PROJECT <b>BJ4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
BJ4 BIOLOGICAL DEFENSE (ACD&P)	3408	0	0	0	0	0	0	0	3408

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

**Project BJ4 BIOLOGICAL DEFENSE (ACD&P):** The Department of Defense (DoD) Biological Defense mission area requires the detection and identification of biological threat agents to provide early warning capabilities at high value mobile and fixed site locations. Collection, detection, and identification of biological warfare (BW) agents are among the highest Commander in Chief/Joint Requirements Oversight Council (CINC/JROC) Counterproliferation priorities. Next generation biological detection systems will provide detection, identification, warning, and sample collection for verification of large area and/or point source biological attacks. This project supports the Technology Transition (TT) Bio program and Joint Biological Point Detection System (JBPDS BLK 2). Beginning in FY04, JBPDS BLK 2 funding moves to CA4. The TT Bio program initiates the system development and integration of lightweight early warning candidates for the Joint Biological Stand-off Detection System (JBSDS) program.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTOR SYSTEM BLK 2	2777	0	0
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>BJ4</b>
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**FY 2003 Accomplishments:**

- 757 JBPDS BLK 2 - Supported improvements to the trigger/detection Line Replaceable Units (LRU) improvement study.
- 1720 JBPDS BLK 2 - Supported execution of the Navy Developmental Test (DT), US Army (USA) and US Air Force (USAF) environmental testing, biological performance testing, and survivability assessment.
- 300 JBPDS BLK 2 - Supported planning of the DT, environmental testing, biological performance testing, and survivability assessment.

**Total** 2777

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TECHNOLOGY TRANSFER FOR BIO SENSORS	631	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 631 TT Bio - Initiated system development of enhanced environmental and military hardening packages for lightweight early warning JBSDS candidate systems.

**Total** 631

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>				PROJECT <b>BJ4</b>		
<b>C. <u>Other Program Funding Summary:</u></b>										
	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>	
BJ5 BIOLOGICAL DEFENSE (SDD)	16185	0	0	0	0	0	0	0	16185	
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	12463	14836	17075	24313	25462	26059	26633	Cont	Cont	
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	89482	0	0	0	0	0	0	0	89482	
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	2959	0	0	0	0	0	0	0	2959	
<b>D. <u>Acquisition Strategy:</u></b>										
JBPDSBLK2	The JBPDS BLK 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 bio detection performance at lower life cycle costs. The Whole System Live Agent Test (WSLAT) is required as part of the operational test program for the JBPDS which is on the Director of Test and Evaluation (DOT&E) oversight list. This test is in compliance DOT&E Memorandum dated July 9, 2002.									



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>BJ4</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
Engineering Support	PO	JPM NBC CA, APG, MD	U	0	310	1Q FY03	0	NONE	0	NONE	3578	3888	0
Subtotal II. Support Costs:													
				0	310		0		0		3578	3888	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
Test and Evaluation at Eglin, AFB	PO	ECBC, APG, MD	U	0	1710	1Q FY03	0	NONE	0	NONE	1435	3145	0
Subtotal III. Test and Evaluation:													
				0	1710		0		0		1435	3145	

Remarks:



<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>BJ4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio													
PM/MS S - TT Bio	Various	PEO-CBD, Falls Church, VA	U	325	136	Oct-02	0	NONE	0	NONE	0	461	0
Subtotal IV. Management Services:				325	136		0		0		0	461	

Remarks:

TOTAL PROJECT COST:	5434	3408	0	0	9618	18460
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Project BJ4

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>BJ4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBPDSBLK2																																
Analysis of Alternatives/Concept Studies	1																															
Complete Development/Hardware Exploration Phase II					1			3																								
Initial Operational Test and Evaluation (IOT&E) Eglin, AFB								3				4																				
Whole System Test Facility Upgrades									1			4																				
Initiate TTSP Phase II									1																							4
TT Bio																																
Developmental Testing (DT)													2		3																	

Project BJ4	Page 10 of 155 Pages	Exhibit R-4a (PE 0603884BP)
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>				PROJECT <b>CA4</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CA4 CONTAMINATION AVOIDANCE (ACD&P)	22084	22642	14938	2494	2495	12493	2503	Continuing	Continuing

**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 Block II (JBPDS BLK II), (5) Joint Service Light Nuclear, Biological, Chemical and Reconnaissance System (JSLNBCRS), (6) Mobile Chemical Agent Detector (MCAD), (7) Nuclear, Biological and Chemical Reconnaissance System (NBCRS) Fox Training System, and (8) the Non-Traditional Agent (NTA) Detection Improvement program.

Artemis will be a near-real time, modular, autonomous, active stand-off Chemical Warfare (CW) agent detection and identification capability, with 360-degree coverage, from a variety of platforms, at ranges on the order of 20 kilometers (km) or more. Full fielding of the operational capability is expected to occur in blocks. Block I will provide an enhanced chemical vapor and aerosol stand-off detection and identification system for fixed sites. Block II builds upon Block I and provides additional Services' assets and improved capabilities in the areas of physical dimensions, sensitivity, early warning, reliability, and life cycle cost. Specifically, Block II will provide on-the-move chemical agent stand-off detection capability for moving platforms such as ground mobile vehicles, ships, rotary wing aircraft, Unmanned Aerial Vehicles (UAV), and Tactical Unmanned Ground Vehicles (TUGV). Block II will also be in a configuration that can be utilized by foot-mobile forces.

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

The JBPDS BLK 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 bio detection performance at lower life cycle costs. In conformance with Director, Operational Test and Evaluation (DOTE) Memorandum dated July 9, 2002 FY04 program funds will support the development of a Whole System Live Agent Testing (WSLAT) capability. DOTE has directed the JBPDS program undergo WSLAT prior to a program Full Rate Production (FRP) decision being made.

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).

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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 will 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 of the network 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.

JOEF will be a near real-time course of action analysis software tool developed in blocks. Using a detailed NBC hazard prediction, JOEF will be capable of modeling the operational impact that results from an CBRN release or attack on fixed land assets, aerial ports of debarkation (Block I), seaports of debarkation (Block II), mobile land assets and littoral areas (Block III). 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.

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MCAD will use passive infrared technology to provide real-time, on-the-move, chemical agent and other hazardous vapor detection for contamination avoidance or reconnaissance operations. The MCAD is a commercial variant of the Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD).

NBCRS Fox Training System will operate on virtual terrain and simulate nuclear, biological and chemical threat to allow integrated training of NBCRS Fox crews.

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.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ARTEMIS - ACTIVE STANDOFF CW DETECTION SYSTEM	6366	7700	2938
RDT&E Articles (Quantity)	0	0	0

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**FY 2003 Accomplishments:**

- 595 ARTEMIS - Continued to prepare source documentation for Milestone (MS) B. Maintained document library and information network for all data, research, and other program information. Continued Simulation Based Acquisition (SBA) activities to reduce cost, schedule, and performance risks; increased the quality, military worth, and supportability of fielded systems; and reduced total ownership costs throughout the system life cycle. Continued to develop and update the Joint System Training Plan (JSTRAP) and the supportability analysis.
- 657 ARTEMIS - Continued to develop system architecture, draft system specification, conduct risk analyses and develop risk mitigation plan through a Joint System Engineering (SE) Integrated Product Team (IPT).
- 1320 ARTEMIS - Continued test strategy and test methodology development to include simulant to real agent correlation and agent fate. Continued Test and Master Plan (TEMP) development through a Joint Test and Evaluation Integrated Process Team (T&E IPT).
- 950 ARTEMIS - Continued risk reduction efforts to further reduce overall program risk in support of the development of key components of an active emitter multi-wave LIDAR technology. Key components considered high risk are solid state lasers, non-consumable detectors, and advanced detection algorithms. Demonstrated and validated performance of these components.
- 2844 ARTEMIS - Initiated support for the development of stand-off detection test infrastructure to provide the capability to adequately test the ARTEMIS system. Developed an active stand-off chamber fixture for testing the ARTEMIS system.

**Total** 6366

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**FY 2004 Planned Program:**

- 1147 ARTEMIS - Continue update of Milestone B program documentation. Perform financial management, scheduling, planning, and reporting. Continue SBA 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. Continue to develop and update the JSTRAP and the supportability analysis.
- 972 ARTEMIS - Continue update of system architecture, system specification and risk mitigation plan through a Joint SE IPT.
- 1420 ARTEMIS - Continue test strategy and test methodology development to include simulant to real agent correlation, simulant and test range selection, aerosol and liquid spectra collection. Update TEMP through a Joint T&E IPT.
- 1661 ARTEMIS - Continue risk reduction efforts to further reduce overall program risk in support of the development of key components of an active emitter multi-wave LIDAR technology. Key components considered high risk are solid state lasers, non-consumable detectors, and advanced detection algorithms. Demonstrate and validate performance of these components.
- 2500 ARTEMIS - Continue support for the development of stand-off detection test infrastructure to provide the capability to adequately test the ARTEMIS system. Develop an active stand-off chamber fixture for testing the ARTEMIS system against chemical warfare simulants. Develop precise referee systems to support evaluation of the ARTEMIS system in an open air simulant test.

**Total** 7700



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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**FY 2005 Planned Program:**

- 813 ARTEMIS - Continue update of MS B program documentation, conduct MS B decision, issue draft and final Request for Proposal (RFP). Perform financial management, scheduling, planning, and reporting. Continue SBA 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. Continue to develop and update the JSTRAP and the supportability analysis.
- 450 ARTEMIS - Finalize system architecture, system specification and risk mitigation plan through a Joint system engineering IPT.
- 875 ARTEMIS - Finalize systems evaluation plan, test strategy and test methodology development. Finalize TEMP through a Joint T&E IPT.
- 800 ARTEMIS - Complete component advanced development work.

**Total** 2938

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	0	5700
RDT&E Articles (Quantity)	0	0	0

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**FY 2005 Planned Program:**

- 3800 JBPDS - Initiate, select, and validate improved trigger/detector Line Replaceable Unit (LRU).
- 1900 JBPDS - Initiate, select, and validate upgraded identifier LRU to meet objective requirement for number of agents and sensitivity.

**Total 5700**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTOR SYSTEM BLK 2	0	7770	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 400 JBPDS BLK II - Conduct initial feasibility and engineering studies of alternative Whole System Live Agent Testing Capability (WSLAT) methods.
- 6994 JBPDS BLK II - Initiate the design and development of facilities that will enable WSLAT of complete systems versus system components against active (living) biological agents. The Director, Operational Test and Evaluation has directed that WSLAT be accomplished prior to a JBPDS Full Rate Production (FRP) decision.
- 376 JBPDS BLK II - Government engineering and technical support.

**Total 7770**

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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO TACTICAL DETECTION SYSTEM	0	0	1300
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 800 JBTDS - Initiate Milestone A activities, and development of acquisition documentation.
- 500 JBTDS - Initiate Concept Exploration phase, and import critical item technologies/Line Replaceable Units (LRUs).

**Total** 1300

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT EFFECTS MODEL	5923	0	0
RDT&E Articles (Quantity)	0	0	0

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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1863 JEM Block I - Completed transition from tech base. Initiated integration of counterforce, passive defense, and hazard/incident software models into a complete system. Developed logistics documentation, initiated Post Deployment Software Support planning, and established online document library and information network for all data, research, and other program information. Prepared for Milestone (MS) B decision. Conducted source selection for development of a standardized hazard prediction model.</li> <li>• 1071 JEM Block I - Developed TEMP and Verification, Validation, and Accreditation (VV&amp;A) strategy. Initiated analysis of CBRN/TIC/TIM field trial data associated with the hazard prediction models Vapor, Liquid and Solid Tracking (VLSTRACK), Hazard Prediction and Assessment Capability (HPAC), and Personal Computing Program for the Chemical Hazard Prediction (D2PC) to identify data gaps. Prepared for and conducted Early Operational Assessment (EOA). Initiated Independent Validation and Verification (IV&amp;V) effort. Developed and refined warfighter use cases. Performed engineering analysis and evaluation of software design documentation. Established and conducted Configuration Control Board (CCB). Continued technical data transition of HPAC, VLSTRACK, and D2PC models.</li> <li>• 2989 JEM Block I - Awarded contract for the development of engineering builds (software only) in support of the Block I for transition to the SDD phase.</li> </ul> <p><b>Total</b>    5923</p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT OPERATIONS EFFECTS FEDERATION	0	1902	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 706 JOEF Block I - Transition from Advanced Technology Development (ATD) and conduct MS B review. Develop JOEF prototype based on JOEF ORD, CONOPS, Conceptual Model and Focused Technology Assessment Report. Initiate Independent Validation and Verification (IV&V). Establish and conduct a CCB.
- 1196 JOEF Block I - Continue development of JOEF prototype implementing user feedback and changes to ORD, CONOPS and Conceptual Model. Develop/update engineering, T&E and logistics documentation. Initiate Post Deployment Software Support (PDSS) planning. Conduct Early Operational Assessment (EOA).

**Total**    1902

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LTWT NBC RECON SYS (JSLNBCRS)	4638	1615	0
RDT&E Articles (Quantity)	0	0	0

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**FY 2003 Accomplishments:**

- 2300 JSLNBCRS - Initiated accelerated development of chemical warfare enhancements of detection software and hardware for the Chemical Biological Mass Spectrometer (CBMS) Block II and the testing required to qualify the detector for operational and installation/force protection applications.
- 2238 JSLNBCRS - Continued development/design of LAV enhancements, installed automatic fire suppression system, LAV Generation II upgrades, and continued test support.
- 100 JSLNBCRS - Initiated sensor network development.

**Total** 4638

**FY 2004 Planned Program:**

- 1615 JSLNBCRS - Continue development, design, test site planning, development of integrated training package, and logistics planning.

**Total** 1615

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT WARNING & REPORTING NETWORK (JWARN)	1413	0	0
RDT&E Articles (Quantity)	0	0	0

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**FY 2003 Accomplishments:**

- 1413 MCAD - Provided systems engineering integration planning support.

**Total** 1413

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MOBILE CHEMICAL AGENT DETECTOR	2504	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 2100 MCAD - Continued contract support of testing and evaluation of MCAD to meet the operational requirements of all Services, and emerging National Defense requirements for remote detection of chemical agents and other hazardous materials.
- 404 MCAD - Initiated agent testing at Dugway Proving Ground.

**Total** 2504

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
RECON SYSTEM, FOX NBC (NBCRS) MODS	1240	0	0
RDT&E Articles (Quantity)	0	0	0

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**FY 2003 Accomplishments:**

- 1240 NBCRS BLKI Fox (Training System) - Completed the design and installation of two Fox Training Systems at Ft. Polk.

**Total** 1240

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NON TRADITIONAL AGENT DETECTION IMPROVEMENT PROGRAM	0	1460	3000
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 500 NTA - Initiate tradeoff 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.
- 960 NTA - Initiate the integration of existing NTA technologies into legacy and developmental detection systems. Initiate developmental testing using simulants and live agents.

**Total** 1460

**FY 2005 Planned Program:**

- 200 NTA - Update tradeoff studies to select and test technologies for detection of NTAs which can be used to augment or improve legacy and developmental detection systems.



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**FY 2005 Planned Program (Cont):**

- 2500 NTA - Continue integration of existing selected NTA technologies into legacy and developmental detection systems. Continue developmental testing using simulants and live agents.
- 300 NTA - Initiate initial operational assessment planning for NTA enhanced detection systems.

**Total 3000**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TECHNOLOGY TRANSFER FOR BIO SENSORS	0	1748	2000
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 1748 TT Bio - Develop technology to allow American troops to instantly identify chemical and biological hazards on the battlefield.

**Total 1748**

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**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.

**Total** 2000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	447	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 447 SBIR - Small Business Innovative Research

**Total** 447

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<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CA5 CONTAMINATION AVOIDANCE (SDD)	69977	112432	70136	39138	23627	13438	20204	Cont	Cont
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	2178	1944	0	0	0	0	4122
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	0	1104	5937	16703	30670	24308	0	0	78722
JC1500 NBC RECON VEHICLE (NBCRV)	6205	23684	18415	24295	7946	0	0	0	80545
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	5900	2085	1933	26303	29466	25317	25758	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	10022	14889	38900	0	0	0	0	0	63811
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	10569	44472	50664	72126	79680	38892	38879	Cont	Cont
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	2999	2733	38871	43682	43753	44226	Cont	Cont

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**D. Acquisition Strategy:**

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 total ownership cost, will be supplied to field units throughout the LRIP phase, until new Full Rate Production (FRP) systems or LRUs are developed and made available to meet a broader range of warfighter requirements.

JBPDSBLK2                The JBPDS BLK 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 bio detection performance at lower life cycle costs. The Whole System Live Agent Test (WSLAT) is required as part of the operational test program for the JBPDS which is on the Director of Test and Evaluation (DOT&E) oversight list. This test is in compliance DOT&E Memorandum dated July 9, 2002.

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JBTDS	<p>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.</p>	
JEM	<p>The JEM program will use a three block evolutionary acquisition approach for the design, development, testing and fielding of JEM (Blocks I, II, and III). 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 Nuclear, Biological, and Chemical (NBC) models. A cost plus award/incentive fee contract will be used for model development.</p>	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
JOEF	<p>JOEF will be developed in three blocks. Block I provides an M&amp;S analysis capability for assessing "fighter type" air base operability and aerial ports of debarkation (APODs). Output centered on sortie generation and cargo throughput respectively. Interoperable with Joint Warfare System (JWARS) Block I and will provide initial tools and data analysis to support CBD ORMS. Block II will further extend capabilities to include seaports of debarkation (SPODs) and other land based fixed site targets (e.g., depots) and will include: cargo throughput and manpower/hardware consideration trade-offs as well as the capability to link output to theater and campaign level models. Block III will add capabilities to include mobile land and littoral forces and will provide links into manpower, logistics and training planning architectures. A cost plus incentive fee contract will be utilized for the Block I effort with options to support Block II and III.</p>	
JSLNBCRS	<p>This joint program follows a modified Non Developmental Item (NDI) strategy integrating 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 Award Decision, for 14 M1113 HMMWV variants is anticipated for 2QFY04. Initial Operational Capability (IOC), HMMWV/LAV variant, is expected during FY06.</p>	
Project CA4/Line No: 069	Page 30 of 155 Pages	Exhibit R-2a (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
JWARN	<p>The revised 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) limited, end-to-end JWARN capability to the warfighter by 4QFY04. This acceleration will be accomplished by leveraging the technology of an extant end-to-end JIC. The JIC will be completed early in the contract cycle, will be demonstrated in 2QFY04, and will be made available to key operational users by 4QFY04 in accordance with U.S. Central Command (CENTCOM) operational needs. 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.</p>	
MCAD	<p>The program procures MCADs for test and evaluation in order to make a rapid determination of MCAD capability to meet emerging National Defense and military requirements. The MCAD evaluation is being conducted as a two-year effort. There may be a follow-on program based on the results of testing conducted at Dugway Proving Ground.</p>	
Project CA4/Line No: 069	Page 31 of 155 Pages	Exhibit R-2a (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
<b>BUDGET ACTIVITY</b> <b>RD&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
<b>NBCRSBLKI</b>	The NBCRS BLKI Fox Trainer program developed and installed two Fox Trainers at FT Hood and FT Polk. These trainers operate on virtual terrain and simulate Nuclear, Biological and Chemical threats to allow integrated training of Fox crews.	



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>ARTEMIS</b>													
HW SB - Multiwave LIDAR - Advanced Component Development Task	MIPR	RDECOM, APG, MD	U	1930	0	NONE	1076	Jan-04	400	Jan-05	0	3406	3543
SW SB - Multiwave LIDAR - Advanced Component Development Task	MIPR	RDECOM, APG, MD	U	1235	950	Jan-03	420	Jan-04	400	Jan-05	0	3005	2350
HW S - System Architecture	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	510	Dec-03	0	NONE	0	510	0
<b>JBPDS</b>													
SW SB - Upgrade Trigger/Detector LRU	C/FFP	GD ATP, DeLand, FL	C	0	0	NONE	0	NONE	1200	2Q FY05	0	1200	0
HW S - Sensor Design	PO	MIT-IL, Boston, MA	F	0	0	NONE	0	NONE	1800	2Q FY05	0	1800	0
<b>JEM</b>													
SW SB - Engineering Builds - Prototyping, Design and Code	C/CPIF	Northrop Grumman	C	0	2800	Jan-03	0	NONE	0	NONE	5000	7800	7847
SW SB - HPAC, VLSTRACK, and D2PC Source Code/Development Environment - SPAWARSSYSCOM	MIPR	Various	U	0	60	Oct-02	0	NONE	0	NONE	0	60	60
<b>JOEF</b>													
SW S - Engineering Builds - Development, Design, and Coding	C/CPIF	TBS	C	0	0	NONE	1137	Feb-04	0	NONE	0	1137	1645

<b>Project CA4</b>	<b>Page 33 of 155 Pages</b>	<b>Exhibit R-3 (PE 0603884BP)</b>
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSLNBCRS</b>													
SW S - CBMS Chemical Warfare Enhancements	MIPR	Oak Ridge National Laboratory, Oak Ridge, TN	U	0	2000	2Q FY03	0	NONE	0	NONE	0	2000	0
HW S - Development/Design of LAV Enhancements	C/FFP	Northrup Grumman, Sierra Vista, AZ	C	0	2238	2Q FY03	0	NONE	0	NONE	0	2238	0
HW SB - Sensor Hardware and Software Development	MIPR	CECOM, FT Monmouth, NJ	U	0	100	3Q FY03	0	NONE	0	NONE	0	100	0
<b>MCAD</b>													
HW S - Prototype Build	SS/CPFF	Northrup Grumman, Linthicum, MD	C	2100	0	NONE	0	NONE	0	NONE	0	2100	0
HW S - Toxic Industrial Chemicals Development	SS/CPFF	Northrup Grumman, Linthicum, MD	C	422	0	NONE	0	NONE	0	NONE	0	422	0
<b>NBCRSBLKI</b>													
HW S - Fabricate/Integrate NBCRS Fox Training Systems	SS/CPFF	ITT Industries, Alexandria, VA	C	7507	975	Jan-03	0	NONE	0	NONE	0	8482	0
SW S - Install NBCRS Fox Training Systems	SS/CPFF	ITT Industries, Alexandria, VA	C	400	150	Jan-03	0	NONE	0	NONE	0	550	0
<b>NTA</b>													
HW C - Detector Enhancement	C/CPFF	TBD	C	0	0	NONE	550	2Q FY04	1800	2Q FY05	0	2350	0
HW S - Technology Downselect Studies - Support	C/CPFF	TBD	C	0	0	NONE	500	2Q FY04	200	2Q FY05	0	700	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT Bio													
Initiate Technology Transition	C/FFP	TBD	C	0	0	NONE	948	2Q FY04	1200	2Q FY05	0	2148	0
Subtotal I. Product Development:				13594	9273		5141		7000		5000	40008	

Remarks: NBCRSBLKI - Fox Training System - Training systems at Ft Polk, LA. Fabrication and integration also include software integration. FY03 completed installation at FT Polk.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>ARTEMIS</b>													
TD/D SB - Integrated Product Team - Systems Engineering	MIPR	Various	U	690	657	Oct-02	695	Oct-03	370	Oct-04	1688	4100	4042
ES S - Integrated Product Team - Test and Evaluation and Systems Engineering Support	C/CPFF	Battelle, Arlington, VA	N	300	122	Oct-02	484	Oct-03	295	Oct-04	563	1764	1305
ES S - Integrated Product Team - Joint Test and Evaluation Plan	MIPR	Various	U	615	1320	Oct-02	1055	Oct-03	795	Oct-04	2400	6185	6311
<b>JBPDSBLK2</b>													
ES C - Engineering Support	PO	JPEOCBD, Falls Church, VA	U	0	0	NONE	400	1Q FY04	0	NONE	0	400	0
<b>JEM</b>													
ES S - Integrated Product Team - Joint Test and Evaluation Planning	MIPR	Various	U	0	450	Oct-02	0	NONE	0	NONE	3148	3598	3598
ES S - Integrated Product Team - Warfighter Storyboard Development	MIPR	Various	U	0	162	Oct-02	0	NONE	0	NONE	240	402	402
ES S - IPT - C4I/Data Interoperability Planning	MIPR	Various	U	0	192	Oct-02	0	NONE	0	NONE	492	684	684
ILS S - Integrated Product Team - Product Support Planning	MIPR	Various	U	0	195	Oct-02	0	NONE	0	NONE	480	675	675

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ES S - Integrated Product Team - Prediction Model Reuse Analysis	MIPR	Various	U	0	205	Oct-02	0	NONE	0	NONE	480	685	685
ES S - Integrated Product Team - System Integration	MIPR	Various	U	0	510	Oct-02	0	NONE	0	NONE	900	1410	1410
<b>JOEF</b>													
ES S - Integrated Product Team - System Engineering, Test, and Logistics	MIPR	Various	U	0	0	NONE	329	Jan-04	0	NONE	3000	3329	4047
<b>JSLNBCRS</b>													
ES C - Logistics and Training Support	C/FP	TBD	C	0	0	NONE	597	2Q FY04	0	NONE	0	597	0
ES SB - CBMS Non-recurring Support	MIPR	JPM NBCCA, APG, MD	U	0	300	1Q FY03	0	NONE	0	NONE	0	300	0
<b>JWARN</b>													
ES S - JWARN System Engineering Support Integration Planning	MIPR	SPAWAR Systems Center-San Diego	U	0	1413	Sep-03	0	NONE	0	NONE	0	1413	0
<b>MCAD</b>													
ES S - Remote Vehicle	MIPR	USMC, Quantico, VA	U	1500	0	NONE	0	NONE	0	NONE	0	1500	0
<b>Subtotal II. Support Costs:</b>													
				3105	5526		3560		1460		13391	27042	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>ARTEMIS</b>													
DTE S - Prototype - Live Agent Active Chamber Fixture	MIPR	PEO STRI, Orlando, FL	U	0	2031	May-03	2350	Mar-04	0	NONE	0	4381	4000
OTHT SB - Multiwave LIDAR - Advanced Component Development Tasks	MIPR	RDECOM, APG, MD	U	500	0	NONE	324	Jan-04	0	NONE	0	824	1000
DTE S - Prototype - Design of Experiment	MIPR	PEO STRI, Orlando, FL		0	585	Apr-03	0	NONE	0	NONE	0	585	0
DTE S - Prototype Algorithm Simulator	MIPR	Dugway Proving Ground, UT	U	0	228	Apr-03	150	Apr-04	0	NONE	0	378	0
<b>JBPDS</b>													
OTHT SB - Validate System Upgrades	MIPR	DTC, APG, MD and DPG, UT	U	0	0	NONE	0	NONE	1500	2Q FY05	0	1500	0
<b>JBPDSBLK2</b>													
OTHT S - Development and Design of Test Methodology and Facilities	MIPR	TBD	U	0	0	NONE	6994	2Q FY04	0	NONE	0	6994	0
<b>JEM</b>													
OTE S - Hazard Prediction Model - Early Operational Assessment	MIPR	Various	U	0	74	Jul-03	0	NONE	0	NONE	0	74	74

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT S - Hazard Prediction Model - Independent Verification and Validation	C/FFP	Battelle	C	0	661	Jan-03	0	NONE	0	NONE	0	661	211
<b>JOEF</b>													
OTHT S - JOEF - Independent Verification and Validation	C/FFP	TBS	C	0	0	NONE	39	Feb-04	0	NONE	0	39	39
OTE S - JOEF - Early Operational Assessment	MIPR	Various	U	0	0	NONE	30	Jul-04	0	NONE	0	30	30
<b>JSLNBCRS</b>													
OTHT S - Test Site Support	MIPR	Dugway Proving Ground, DPG, UT	U	0	0	NONE	510	2Q FY04	0	NONE	0	510	0
<b>MCAD</b>													
DTE S - Development Testing	MIPR	Various	U	504	323	2Q FY03	0	NONE	0	NONE	0	827	0
DTE S - Test Support	SS/CPFF	Northrup Grumman, Linthicum, MD	C	1400	2081	2Q FY03	0	NONE	0	NONE	0	3481	0
<b>NBCRSBLKI</b>													
OTE C - Operational Testing On System Components	SS/CPFF	ITT Industries, Alexandria, VA	C	300	50	Jan-03	0	NONE	0	NONE	0	350	0
<b>NTA</b>													
DTE C - NTA Enhancement Testing	MIPR	TBD	U	0	0	NONE	250	4Q FY04	750	2Q FY05	0	1000	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>ARTEMIS</b>													
PM/MS S - Program Office - Planning and Programming	WR	NSWCDD, Dahlgren, VA	U	1201	362	Oct-02	427	Oct-03	403	Oct-04	7200	9593	10076
PM/MS S - Program Office - Program Support	C/CPFF	Battelle, Arlington, VA	N	742	111	Oct-02	209	Oct-03	275	Oct-04	8100	9437	9293
PM/MS S - Integrated Product Team - Management Team	MIPR	Various	U	100	0	NONE	0	NONE	0	NONE	700	800	890
<b>JBPDS</b>													
PM/MS S - Engineering Support	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	0	NONE	1200	2Q FY05	0	1200	0
<b>JBPDSBLK2</b>													
PM/MS C - Program/Project Support	PO	JPEOCBD, Falls Church, VA	U	0	0	NONE	376	1Q FY04	0	NONE	0	376	0
<b>JBTDS</b>													
PM/MS S - Milestone A Preparation and Acquisition Documentation Development	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	0	NONE	1300	2Q FY05	0	1300	0
<b>JEM</b>													
PM/MS S - Program Office - Planning and Programming	MIPR	Various	U	150	614	Oct-02	0	NONE	0	NONE	480	1244	844

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CA4</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
PM/MS SB - Program Office - Planning and Programming	WR	SPAWARSYSCOM, San Diego, CA	U	0	0	NONE	367	Jan-04	0	NONE	1600	1967	2342
JSLNBCRS													
PM/MS S - Development, Design, & Engineering Support	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	508	2Q FY04	0	NONE	0	508	0
MCAD													
PM/MS S - Planned Project Support	MIPR	JPM NBCCA, APG, MD	U	174	100	2Q FY03	0	NONE	0	NONE	0	274	0
NBCRSBLKI													
PM/MS S - Program/Project Management	MIPR	JPM NBC CA, APG, MD	U	368	65	Oct-02	0	NONE	0	NONE	0	433	0
NTA													
PM/MS S - Support Services	MIPR	Various	U	0	0	NONE	160	1Q FY04	250	1Q FY05	0	410	0
TT Bio													
Management Support and Planning	C/FP	TBD	C	0	0	NONE	300	NONE	100	2Q FY05	0	400	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	447	NONE	0	NONE	0	447	0
Subtotal IV. Management Services:				2735	1252		2794		3528		18080	28389	

Remarks:

Project CA4
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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TOTAL PROJECT COST:	22138	22084		22642		14938		36471	118273	
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<div style="display: flex; justify-content: space-between; padding: 10px;"> <span>Project CA4</span> <span>Page 43 of 155 Pages</span> <span>Exhibit R-3 (PE 0603884BP)</span> </div>
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
Concept Exploration	1Q																															
Component Advanced Development (ACD) Decision Review	1Q																															
Component Advanced Development	1Q	—————												2Q																		
BLK I - Release Draft Request for Proposal (RFP)													1Q																			
BLK I - Milestone B Decision													2Q																			
BLK I - Award System Development and Demonstration (SDD) Contract																	2Q															
BLK I - Sytems Development and Demonstration (SDD) Prototype Development																	3Q	—————												2Q		
BLK I - SDD Developmental Prototype Testing (Developmental Testing (DT) I/II/Operational Analysis (OA))																	4Q	—————												1Q		
BLK I - Milestone C Low Rate Initial Production (LRIP)																																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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 (Cont)																																
BLK I - Award Low Rate Initial Production (LRIP) Contract / Option																																2Q
BLK 1 - Low Rate Initial Production (LRIP) Development																																2Q - 4Q
JBPDS																																
Select Detector and Identifier												1Q																				
System Level Laboratory Test												1Q 2Q																				
Field Operational Assessment												3Q																				
ECP/System Documentation for Upgrade via Spares												4Q																				
JBPDSBLK2																																
Analysis of Alternatives/Concept Studies				1Q																												
Complete Development/Hardware Exploration Phase II								1Q - 3Q																								
Initial Operational Test and Evaluation (IOT&E) Eglin, AFB								3Q 4Q																								

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) CA4</b>	PROJECT <b>CA4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009																													
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																						
JBPDSBLK2 (Cont)																																																										
Whole System Test Facility Upgrades									1Q	—————			4Q																																													
Initiate TTSP Phase II									1Q	—————																												4Q																				
JBTDS																																																										
Milestone A Activities & Acq Document Preparation													1Q	—————			3Q																																									
Milestone A Decision																																																										
Technology Transfer													1Q	—————			4Q																																									
JEM																																																										
0BLK I - Baseline Review				4Q																																																						
BLK I - Storyboard Development (CB3-TBNM)			4Q	—————	3Q																																																					
BLK I - Technology Development Decision Review (CB3-TBNM)					1Q																																																					
BLK I - Software Development							3Q	—————	4Q																																																	
JOEF																																																										

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CA4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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	—————				4Q																							
BLK I - Milestone B									2Q																							
BLK I - Award Systems Development and Demonstration (SDD) Contract									2Q																							
BLK I - Software Development									2Q	—————				3Q																		
BLK I - Early Operational Assessment (EOA)												4Q																				
JSLNBCRS																																
Continue Development, Design, and Logistics Planning									1Q	—————				4Q																		
MCAD																																
Initiate Agent and Interference Testing								1Q	—————				3Q																			
Initiate Urban Interference Trials							2Q																									
NBCRSBLKI																																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b> PROJECT <b>CA4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NBCRSBLKI (Cont)																																
Fox Trainer Hardware Fabrication and Proc FtPolk	>>	—————						4Q																								
Fox Trainer Software Dev FT Polk	>>	—————						4Q																								
Fox Trainer Installation at FT Polk								4Q																								
Fox Trainer Eng Study		2Q	—————		1Q																											
NTA																																
Conduct Technology Downselect for Non-traditional Agent (NTA) Technologies									1Q	2Q																						
Developmental Testing of Non-traditional Agent (NTA) Technologies										3Q	—————		3Q																			
Integrate Non-traditional Agent (NTA) Technologies on Selected Systems										3Q	—————		2Q																			
Conduct Planning for Operational Assessment															3Q	4Q																
TT Bio																																
Developmental Testing (DT)													2Q	3Q																		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CM4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM4 HOMELAND DEFENSE (ACD&P)	966	990	0	2593	0	0	0	0	4549

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

**Project CM4 HOMELAND DEFENSE (ACD&P):** This project funds studies in support of Weapons of Mass Destruction Civil Support (WMD CS) operations.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	966	973	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 966 WMD CST - Conducted chemical and biological research studies.

**Total** 966

**FY 2004 Planned Program:**

- 480 WMD CST - Initiate Phase II HAPSITE component testing.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CM4</b>
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**FY 2004 Planned Program (Cont):**

- 493 WMD CST - Initiate component level testing of commercial Level A and B ensembles.

**Total** 973

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	17	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 17 SBIR - Small Business Innovative Research

**Total** 17

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CM4</b>
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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
CM5 HOMELAND DEFENSE (SDD)	956	5974	24274	389	0	0	0	0	31593
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1520	1558	1568	1555	1552	0	0	0	7753

**D. Acquisition Strategy:**

WMD CST            This program utilizes multiple acquisition vehicles: 1) This program funds the acquisition of Chemical and Biological Defense equipment as outlined in the Defense Reform Directive #25 (DRID #25); 2) Design and develop new Mobility Platform for the Analytical Laboratory System-System Enhancement Program (ALS-SEP) that displaces interim Dismounted Analytical Platform (DAP) and legacy Mobile Analytical Laboratory Systems (MALs); 3) Conduct Initial Operational Test and Evaluation (IOT&E) of ALS SEP in FY04; 4) Initiate Block I upgrades program in FY03/FY04 of Unified Command Suite (UCS) and ALS systems to incorporate technology insertion via To Be Selected (TBS) contracts; 5) In FY05 conduct Developmental Test (DT) and IOT&E of prototype systems and produce system improvement/enhancement upgrades; 6) Continue evaluation of existing and new commercial off-the-shelf (COTS) equipment to incorporate into Table of Distribution and Allowances (TDA) to meet increasing requests; and 7) Continue US Army Reserve (USAR) type-classified CB equipment refurbishment.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) CM4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
HW C - Chem/Bio Diagnostic	MIPR	RDECOM, Edgewood, MD	U	0	966	NONE	0	NONE	0	NONE	0	966	0
Subtotal I. Product Development:				0	966		0		0		0	966	

Remarks:

II. Support Costs: Not applicable



<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) PROJECT                  CM4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	MIPR	HQ AMC, Alexandria, VA	U	0	0	NONE	17	1Q FY04	0	NONE	0	17	0
Subtotal IV. Management Services:				0	0		17		0		0	17	

Remarks:

TOTAL PROJECT COST:	0	966		990		0		0	1956
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) CO4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CO4 COLLECTIVE PROTECTION (ACD&P)	1781	0	0	0	0	0	0	0	1781

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

**Project CO4 COLLECTIVE PROTECTION (ACD&P):** Funding supports Component Advanced Development and System Integration (CAD/SI) of CB collective protection systems that are smaller, lighter, less costly and more easily supported logistically at the crew, unit, ship, and aircraft level.

JCPE - funds are needed to develop, evaluate, mature, and integrate prototype JCPE Capability Sets of improved Chemical/Biological (CB) Collective Protection (CP) shelter components. In 2QFY02, ATSD(CBD) approved a two-year plan to provide CP Capability Sets to the following five shelters: Tent, Extendable, Modular, Personnel (TEMPER), Modular General Purpose Tent System (MGPTS), Small Shelter System (SSS), Medium Shelter System (MSS), and Modular Command Post System (MCPS). CP capability set prototype components will be tested in a realistic operating environment.

**B. Accomplishments/Planned Program**

	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
JOINT COLLECTIVE PROTECTION EQUIPMENT	1781	0	0
RDT&E Articles (Quantity)	0	0	0



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CO4</b>
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**FY 2003 Accomplishments:**

- 1781 JCPE - Conducted improvements to CB protection system switchover, pressure regulator, and provided an alternative entry/exit for M28 Collective Protection Equipment (CPE). Conducted improvements to M28 CPE motor-blower hose to prevent dust and sand contamination. Conducted improvements to the interval timer used in M28 CPE and Chemical Biological Protective Shelter (CBPS) airlocks. Conducted radiant barrier material testing for Tent, Extendable, Modular, Personnel (TEMPER) vestibule liner. Initiated Toxic Industrial Chemical (TIC) absorbent media for 100/200 cubic feet per minute (CFM) Gas Filters. Initiated user testing and vapor challenge on improved full scale M28 prototype liners, closures, and construction.

**Total** 1781

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CO5 COLLECTIVE PROTECTION (SDD)	4106	2923	2590	4118	4576	2668	2724	Cont	Cont
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	6548	19414	2183	2043	1798	2917	0	0	34903

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CO4</b>

**D. Acquisition Strategy:**

JCPE                      The JCPE acquisition strategy is to consolidate planned improvements to fielded collective protection systems into one Joint product improvement program for addressing deficiencies, improvements, and cost saving initiatives. System improvements, after successful prototype development and testing, are delivered via a performance specification that can then be implemented by respective Services through an engineering change proposal (ECP) process. All modified components will be fabricated and tested to ensure Service compatibility. Fielding will be accomplished through phased replacement or attrition through the supply system. Existing procurement contracts are leveraged to expedite fielding improvement upgrades.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CO4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
HW C - TICs Adsorbent Media for 100/200 CFM Gas Filters	WR	ECBC, Edgewood, MD	U	0	400	4Q FY03	0	NONE	0	NONE	0	400	0
HW C - M28 CPE Component Improvements	WR	RDECOM, Natick, MA	U	0	300	4Q FY03	0	NONE	0	NONE	0	300	0
HW C - M28 CPE Motor-Blower Hose Improvement	WR	RDECOM, Natick, MA	U	0	130	4Q FY03	0	NONE	0	NONE	0	130	0
HW C - Improved M28 CPE and CBPS Interval Timer	WR	RDECOM, Natick, MA	U	0	100	4Q FY03	0	NONE	0	NONE	0	100	0
HW C - TEMPER Vestible Liner Radiant Barrier Material Development	WR	RDECOM, Natick, MA	U	0	30	4Q FY03	0	NONE	0	NONE	0	30	0
Subtotal I. Product Development:				0	960		0		0		0	960	

Remarks:

II. Support Costs: Not applicable

Project CO4

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CO4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
DTE C - Improved Liners/Closures/Construction	WR	RDECOM, Natick, MA	U	0	651	4Q FY03	0	NONE	0	NONE	0	651	0
DTE C - TEMPER Vestible Liner Radiant Barrier Material Testing	WR	RDECOM, Natick, MA	U	0	70	4Q FY03	0	NONE	0	NONE	0	70	0
Subtotal III. Test and Evaluation:				0	721		0		0		0	721	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCPE													
PM/MS S - JCPE ColPro JPO support	WR	RDECOM, Natick, MA	U	0	100	4Q FY03	0	NONE	0	NONE	0	100	0
Subtotal IV. Management Services:				0	100		0		0		0	100	

Remarks:

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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) CO4</b>	PROJECT <b>CO4</b>
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TOTAL PROJECT COST:	0	1781	0	0	0	0	0	1781	0
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CO4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																				
Develop and Test Radiant Barrier Matl-TEMPER								4Q																								

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	12463	14836	17075	24313	25462	26059	26633	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 Aerial Ports of Debarkation (APODs) and Sea Ports of Debarkation (SPODs) under threat of chemical or biological attack is one of the highest Combatant Commander's 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 the Advanced Concept Technology Demonstration (ACTD) process.

The Restoration of Operations (RestOps) ACTD investigates the impact of technology and CONOPS on restoring operating tempo at an airbase following a CB attack. RestOps are those pre/during/post attack actions necessary to protect against and then immediately react to the consequences of a CB attack on an airbase so that the facility can resume functioning with minimal down time. This ACTD will provide technology, software support, and tactics, techniques and procedures allowing an airbase commander to minimize the impact of a CB attack on military operations.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
<p>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).</p> <p>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&amp;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&amp;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) - Define the problem(s); (2) Phase II (FY04) - develop solutions to include a fusion cell approach and force protection initiatives; and (3) Phase III (FY05) - Implementation using Advanced Concept Technology Demonstrations (ACTD), Advanced Technology Demonstrations (ATD), or Joint Warfighting Experiments (JWE) to demonstrate solution sets identified during Phase II such as fusion cell, medical surveillance, force protection condition triggers, and other concepts.</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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The Counterproliferation Support Program ACTD is proposing an FY05 candidate 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 Lightweight 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.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BIOLOGICAL WARFARE COUNTERMEASURES INITIATIVES	0	0	2000
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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**FY 2005 Planned Program:**

- 2000 BWCI - Support United States Pacific Command (PACOM) Biological Warfare Countermeasures Initiative (BWCI) defense initiatives and further exercise of the fusion cell concept as it transitions from Advanced Technology Development.

**Total** 2000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CONTAMINATION AVOIDANCE AT SEAPORTS OF DEBARKATION (CASPOD) ACTD	5342	10917	2938
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 3344 CASPOD - Conducted Military Utility Assessment (MUA) during the preliminary demonstration at CASPOD selected seaports.
- 926 CASPOD - Conducted scenario development and develop plans for Chemical and Biological Port Defense Tactics, Techniques, and Procedures (TTP) for military users
- 332 CASPOD - Continued CONOPS development, policy initiatives, coordinated exercise and participant involvement, and scenario development.
- 70 CASPOD - Initiated user training on new technologies in preparation for preliminary and final demonstrations. Completed user training for final demonstrations at selected seaports.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	
PROJECT <b>CP4</b>		
<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 670 CASPOD - Coordinated and performed Continental United States (CONUS) seaport demonstration and conducted evaluation of new technologies.</li> </ul> <p><b>Total 5342</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2017 CASPOD - Finalize system integration and system test efforts of sensor, alarm, and warning device hardware with Command and Control software.</li> <li>• 3200 CASPOD - Perform Military Utility Assessment (MUA) of CASPOD technologies during the CASPOD final demonstration.</li> <li>• 1200 CASPOD - Complete TTP for the use of the CASPOD ACTD technologies. Complete training plan and documentation for final demonstration. Conduct program integration tasks.</li> <li>• 1100 CASPOD - Initiate transition and residual support planning. Acquire logistic support for initial year of residual phase.</li> <li>• 3400 CASPOD - Conduct final demonstration, acquire and transport test equipment, cargo containers, vehicles, sealift ship, and provide for travel of users and other logistics support items.</li> </ul> <p><b>Total 10917</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1469 CASPOD - Execute residual support for CASPOD fielded technologies.</li> </ul>		
Project CP4/Line No: 069	Page 67 of 155 Pages	Exhibit R-2a (PE 0603884BP)

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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**FY 2005 Planned Program (Cont):**

- 1469 CASPOD - Complete transition planning, acquire logistics support, and complete logistics support planning.

**Total** 2938

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
COUNTERPROLIFERATION ACTD	0	0	12137
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 2225 CUGR Contaminated Surface Detector (CSD) - Complete sensor component design, platform design, and integration.
- 2275 CUGR CSD - Initiate test methodology development, perform developmental testing, and initiate operational test planning and operation assessment.
- 2700 CUGR CSD - Begin prototype assembly of CSD into JSLNBCRS vehicle.
- 475 CUGR CSD - Initiate Integrated Logistics Support planning and transition planning.
- 4375 CUGR Unmanned Ground Vehicle (UGV) - Conduct market research and initiate system design and integration.
- 87 CUGR UGV - Initiate development test planning and developmental testing.

**Total** 12137

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
RESTOPS ACTD	7121	3668	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 515 RestOps ACTD - Completed user training for final demonstrations at selected airbases.
- 2100 RestOps ACTD - Conducted the RestOps final user demonstration on new technologies taking it through the preliminary demonstration.
- 2540 RestOps ACTD - Initiated planning, procurement, and contractor logistics support services for residual support on selected technologies.
- 1049 RestOps ACTD - Finalized policy initiatives and completed information technology integration.
- 917 RestOps ACTD - Developed and completed MUA report as well as completed CONOPS documents.

**Total** 7121

**FY 2004 Planned Program:**

- 2423 RestOps ACTD - Complete transition of successfully demonstrated technologies and complete residual support.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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**FY 2004 Planned Program (Cont):**

- 1245 RestOps ACTD - Complete development of TTP for biological warfare countermeasures - counter biological fusion cell and situational awareness.

**Total**    3668

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	251	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 251 SBIR - Small Business Innovative Research

**Total**    251

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
BJ4 BIOLOGICAL DEFENSE (ACD&P)	3408	0	0	0	0	0	0	0	3408
BJ5 BIOLOGICAL DEFENSE (SDD)	16185	0	0	0	0	0	0	0	16185
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	2959	0	0	0	0	0	0	0	2959

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**D. Acquisition Strategy:**

CPSP ACTD	CPSP ACTD - This project is a generic block description for future ACTDs. A leading candidate for FY05 is CUGR ACTD. 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.
RESTOPS	Technologies were derived from a Commerce Business Daily announcement (No Request for Proposal) in the same fashion as is used for Joint Field Trial for Biological Detection. In this case, submitters were informed that only mature technologies would be selected. No funds were issued to the submitters. Information received was used for a down select in April 2000. Fifty-one technologies were selected. All were loaned by the vendors for use in testing at Dugway Proving Ground. This testing was completed December 2000. A further downselect was completed February 2001. Those selected technologies were leased for Limited User Tests (LUT) completed in FY01. A single contract was awarded to purchase or lease test articles. Those technologies passing the LUT will then be coupled with training for use at Osan Air Base in the Republic of Korea or in smaller events within the U.S. Technologies passing the Military Utility Assessment (MUA) will be transitioned to acquisition programs as appropriate.



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CP4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CASPOD</b>													
HW S - Procure CASPOD Technologies	PO	Army-Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	1200	2Q FY04	0	NONE	0	1200	0
HW SB - Conduct System Integration	PO	Army-Soldier Biological Chemical Command, APG, MD		0	0	NONE	2017	3Q FY04	0	NONE	0	2017	0
<b>CPSP ACTD</b>													
HW C - CUGR - CSD System Design and Integration	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	2225	2Q FY05	0	2225	0
HW C - CUGR CSD - Begin Prototype Assembly	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	2700	2Q FY05	0	2700	0
HW C - CUGR - UGV - Initiate System Design and Integration	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	4375	2Q FY05	0	4375	0
<b>Subtotal I. Product Development:</b>				<b>0</b>	<b>0</b>		<b>3217</b>		<b>9300</b>		<b>0</b>	<b>12517</b>	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CP4</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CASPOD</b>													
ILS S - Training for Preliminary Demonstration and Final Demonstration	Allot	Army- US Army Chemical School, Ft Leonard Wood, MO	U	0	70	1Q FY03	0	NONE	0	NONE	0	70	0
ILS S - Residual Support	Allot	Army - Army-Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	1100	3Q FY04	2938	1Q FY05	0	4038	0
TD/D SB - Conduct Final Demonstration Scenario Development	SS/FP	SAIC, Arlington, VA	C	0	926	2Q FY03	0	NONE	0	NONE	0	926	0
<b>CPSP ACTD</b>													
ILS C - CUGR CSD - Initiate Transition Planning and ILS Planning	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	475	2Q FY05	0	475	0
<b>RESTOPS</b>													
ILS S - Training for Preliminary and Final Demonstrations	Allot	Army - US Army Chemical School, Ft Leonard Wood, MO	U	550	515	2Q FY03	0	NONE	0	NONE	0	1065	0
ILS S - Residual Support	Allot	Army - Soldier Biological Chemical Command, APG. MD	U	0	2540	2Q FY03	1362	2Q FY04	0	NONE	0	3902	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TD/D S - Military Utility Assessment Report and CONOPS Documents	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	917	2Q FY03	0	NONE	0	NONE	0	917	0
<b>Subtotal II. Support Costs:</b>				<b>550</b>	<b>4968</b>		<b>2462</b>		<b>3413</b>		<b>0</b>	<b>11393</b>	

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CP4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CASPOD</b>													
OTE SB - Conduct Demonstrations	PO	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	3200	1Q FY04	0	NONE	0	3200	0
OTHT SB - Conduct CONOPS Validation	Allot	US Central Command - MacDill AFB, Tampa, FL	U	0	0	NONE	3400	1Q FY04	0	NONE	0	3400	0
OTHT SB - Conduct Operational and Functional Tests During Limited User Tests	PO	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	3344	1Q FY03	0	NONE	0	NONE	0	3344	0
OTHT SB - Conduct Chemical and Biological Defense Concepts of Operation	MIPR	US Central Command, MacDill AFB, Tampa, FL	U	0	332	1Q FY03	0	NONE	0	NONE	0	332	0
OTHT SB - Conduct Preliminary Demonstration	PO	US Transportation Command, St. Louis, MO		0	670	2Q FY03	0	NONE	0	NONE	0	670	0
<b>CPSP ACTD</b>													
DTE C - CUGR CSD - Test Methodology, Developmental Testing	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	1650	2Q FY05	0	1650	0
OTE C - CUGR CSD Initiate OT&E Planning and Testing	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	625	2Q FY05	0	625	0

<b>Project CP4</b>	<b>Page 76 of 155 Pages</b>	<b>Exhibit R-3 (PE 0603884BP)</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>
<b>PROJECT CP4</b>	

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE C - CUGR - UGV Initiate Test Methodology	Allot	Army - RDECOM, ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	87	3Q FY05	0	87	0
<b>RESTOPS</b>													
OTHT SB - Conduct Preliminary and Final Demonstrations at Osan AB, Korea	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	2590	2100	2Q FY03	0	NONE	0	NONE	0	4690	0
<b>Subtotal III. Test and Evaluation:</b>				<b>2590</b>	<b>6446</b>		<b>6600</b>		<b>2362</b>		<b>0</b>	<b>17998</b>	

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>CP4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>BWCI</b>													
PM/MS SB - BWCI Management and Fusion Cell Development	Allot	Commander, Pacific Command, Camp Smith, HI	U	0	0	NONE	0	NONE	2000	4Q FY04	0	2000	0
<b>RESTOPS</b>													
PM/MS S - Perform Program Management for RestOps	Allot	DTRA, Alexandria, VA	U	1173	1049	Oct-02	1661	1Q FY04	0	NONE	0	3883	0
PM/MS SB - BWCI Fusion Cell Development	WR	NDRI, Rand, San Diego, CA	F	0	0	NONE	400	1Q FY04	0	NONE	0	400	0
PM/MS SB - BWCI Retrograde	WR	National Defense University, Washington, DC	U	0	0	NONE	150	1Q FY04	0	NONE	0	150	0
PM/MS SB - BWCI Management	WR	Commander Pacific Command, Camp Smith, HI	U	0	0	NONE	95	1Q FY04	0	NONE	0	95	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	251	NONE	0	NONE	0	251	0
<b>Subtotal IV. Management Services:</b>													
				1173	1049		2557		2000		0	6779	

Remarks:

Project CP4

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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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TOTAL PROJECT COST:	4313	12463		14836		17075		0	48687
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>CP4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RESTOPS																																
Scenario/Exercise Development	>>	2Q																														
Concept of Operations (CONOPS) Development	1Q		4Q																													
Functional Test	>>		4Q																													
Procurement	>>		3Q																													
Training		2Q		2Q																												
Osan AB Demonstration Vignette			3Q																													
DPG Decon Demonstration Vignette			3Q																													
DPG Medical Demonstration Vignette				4Q																												
Joint Warfighting Experiment (JWE)/Final Demonstration							2Q																									
Fielding Support (CLS)							2Q		1Q																							



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
DE4 DECONTAMINATION SYSTEMS (ACD&P)	6480	24462	17886	6798	3872	0	6696	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 with reduced operational impact, reduced logistics burden, reduced costs, increased safety, and minimize environmental effects over currently fielded decontaminants. This funding supports the Joint Service Family of Decontamination Systems (JSFDS) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs.

The JSFDS program was subdivided into four blocks until the program was restructured in FY03 to support an evolutionary acquisition strategy. The JSFDS will consist of a Joint Service Man-Portable Decontamination System (JSM-PDS), a small-scale and large-scale Joint Service Transportable Decontamination Systems (JSTDS), a Joint Service Stationary Decontamination System (JSSDS) and a Joint Service Personnel/Skin Decontamination System (JSPDS). The initial increment for these systems will provide the warfighter with an enhanced fixed site, equipment and personnel decontamination capability. Follow-on increments will increase fielded capability through technology insertion.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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The JSSED program will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment, vehicle/aircraft interiors, and associated cargo. The JSSED program will be a dual technology development program: JSSED/XM25 will do sensitive equipment/items decontamination and JPID will fill an immediate need to decontaminate chemical and biological warfare agents from vehicle/aircraft interiors, and associated cargo. The Joint Platform Interior Decontamination (JPID) will utilize an incremental approach to address individual key capabilities to reduce program risk and support production schedule.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS FAMILY OF DECON SYSTEMS (JSFDS)	0	7241	3958
RDT&E Articles (Quantity)	0	70	0

**FY 2004 Planned Program:**

- 2641 JSFDS - Finalize Test and Evaluation Master Plan (TEMP), down-selection test methodology, System Acquisition Management Plan and Request for Proposal for JSPDS, JSM-PDS and JSTDS to support a Milestone (MS) B decision.
- 4200 JSFDS - Procure test units for down-selection testing (70 systems at average cost of 60K)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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**FY 2004 Planned Program (Cont):**

- 400 JSFDS - Perform engineering and logistics studies to include an evaluation of alternative means of enhancing decontamination of aircraft to expedite an increase in capability in the near term, to identify potential simulants for use in testing or training and to establish baseline for evaluating improvements in logistics.

**Total** 7241

**FY 2005 Planned Program:**

- 300 JSFDS - Perform market survey and initiate development of program acquisition documentation for JSSDS.
- 658 JSFDS - Perform studies of technologies for improving personnel/skin decontamination capability including assessment of potential of wound decontamination.
- 1500 JSFDS - Perform analysis of alternatives, including testing, for using decontamination simulants in lieu of decontaminants and agents for training.
- 1500 JSFDS - Perform study to determine potential of selected systems to decontaminate toxic industrial chemicals and new threat agents.

**Total** 3958

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS SENSITIVE EQUIP DECON	6480	16815	13928
RDT&E Articles (Quantity)	0	8	6

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>

**FY 2003 Accomplishments:**

- 3280 JSSED - Completed Block I prototype testing and conducted program Interim Progress Review (IPR) to finalize Block I technology and system design.
- 2700 JSSED - Awarded fluid optimization contracts to characterize solvent and filtration mechanism for removal or neutralization of chemical and biological agents.
- 100 JSSED - Initiated market survey for commercial industrial base for solvent/disinfectant technologies.
- 250 JSSED - Initiated identification of materials of construction for sensitive equipment.
- 150 JSSED - Initiated Block II/III Milestone B documentation, which includes Test and Evaluation Master Plan, System Acquisition Master.

**Total** 6480

**FY 2004 Planned Program:**

- 4272 JSSED - Complete optimization effort of primary solvent-based system.
- 2000 JSSED - Initiate development of pre-cleaning decontamination system to remove gross contamination from sensitive equipment.
- 2798 JSSED - Award competitive contract for pre-production system design and fabricate developmental test systems (eight items at \$300K each).
- 500 JSSED - Initiate System Development & Demonstration (SDD) Statement of Work.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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<p><b>FY 2004 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2000 JSSED - Develop acquisition documentation support for Increment I of JSSED ORD.</li> <li>• 500 JSSED - Develop, coordinate and process Increment I Temp.</li> <li>• 300 JPID - Continue documentation for Milestone (MS) B.</li> <li>• 2000 JPID - Initiate support for the Integrated Product Team.</li> <li>• 500 JPID - Initiate identification of platform materials compatibility testing.</li> <li>• 300 JPID - Initiate market survey for commercial base.</li> <li>• 300 JPID - Update Analysis of Alternatives (AoA).</li> <li>• 300 JPID - Initiate developmental test (DT) planning.</li> <li>• 1045 JPID - Initiate Industry Day for exploration of S&amp;T and develop exchange with service/industry.</li> </ul> <p><b>Total 16815</b></p>
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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**FY 2005 Planned Program:**

- 1000 JSSED - Finalize planning for DT to include upgrade of test chambers.
- 2000 JSSED - Complete optimization effort of primary solvent base system.
- 2000 JSSED - Complete the system integration of pre-clean capability and initiate military utility testing.
- 1000 JSSED - Initiate development of acquisition logistics.
- 528 JPID - Continue support to the Integrated Product Team.
- 3000 JPID - Continue DT and plan for operational testing (OT).
- 1300 JPID - Award contract for prototype test units for DT (build six systems @ \$50K each).
- 1200 JPID - Develop the Technology Readiness Evaluation.
- 1500 JPID - Complete documentation for MS B.
- 400 JPID - Initiate documents/package for MS C.

**Total** 13928

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	406	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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**FY 2004 Planned Program:**

- 406 SBIR - Small Business Innovative Research

**Total 406**

**C. Other Program Funding Summary:**

		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
DE5 DECONTAMINATION SYSTEMS (SDD)		4415	8586	3337	5710	5412	9910	4782	Cont	Cont
G47001 MODULAR DECON SYSTEM		1506	0	0	0	0	0	0	0	1506
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)		10959	7319	6426	0	11680	19446	30618	Cont	Cont
JN0018 SORBENT DECON		9369	1253	0	0	0	0	0	0	10622

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>

**D. Acquisition Strategy:**

JSFDS                      The JSFDS program will use an evolutionary acquisition strategy with spiral development and will produce four distinct products. 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.

JSSSED                      Utilize a three increment approach to address individual key capabilities to reduce program risk and support production schedule.

1. JSSSED/XM25: Sensitive Equipment/Items Decontamination
2. Aircraft/Vehicle Interior/Cargo Decontamination
3. On the Move Aircraft/Vehicle Interior/Cargo Decontamination

Investigate all technologies to determine their utility for all three decontamination increments. Mitigation of technical risk associated with less mature technologies will take longer with the aircraft/vehicle interior/cargo decontamination and on the move aircraft/vehicle interior/cargo decontamination systems.

Competitive award for JSSSED/XM25 and aircraft/vehicle interior/cargo decontamination leading to type classification. Decontamination on the move may be a pre-planned product improvement (P3I) of aircraft/vehicle interior/cargo decontamination systems.



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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>DE4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSFDS</b>													
HW S - Procure 84 Decontamination Systems for Test	C/FFP	Various	C	0	0	NONE	4200	4Q FY04	0	NONE	0	4200	0
<b>JSSED</b>													
HW S - Develop Block I Prototype System	C/CPFF	Smith Industries Environ Tech Group, Baltimore MD	C	1000	1340	Feb-03	0	NONE	0	NONE	0	2340	0
SW SB - Develop Fluid Optimization	C/CPFF	Battelle Memorial Institute, Aberdeen MD	C	0	1400	Jun-03	2326	2Q FY04	0	NONE	0	3726	0
SW SB - Develop Fluid Optimization	C/CPFF	Guild Associates, Dublin OH	C	0	1100	Jun-03	2362	2Q FY04	0	NONE	0	3462	0
HW SB - Fabricate Developmental Test Hardware for XM25 SDD Contract	C/CPFF	TBD	C	0	0	NONE	3900	Feb-04	1524	2Q FY04	0	5424	0
SW SB - Conduct JPID Industry Day	Allot	TBS	U	0	0	NONE	1344	3Q FY04	0	NONE	0	1344	0
HW S - JPID Prototype System	C/CPFF	TBS		0	0	NONE	2801	3Q FY04	2400	2Q FY05	0	5201	0
HW S - Fabricate Development Test Hardware for JPID	PO	TBS		0	0	NONE	0	NONE	1500	1Q FY05	0	1500	0
<b>Subtotal I. Product Development:</b>				<b>1000</b>	<b>3840</b>		<b>16933</b>		<b>5424</b>		<b>0</b>	<b>27197</b>	

Remarks:

Project DE4
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2004</b>			
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<b>BUDGET ACTIVITY RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>					<b>PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>							<b>PROJECT DE4</b>	
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSFDS</b>													
ILS S - JSFDS Logistics studies	MIPR	Various	U	0	0	NONE	150	1Q FY04	0	NONE	0	150	0
ES S - JSFDS Engineering Studies	MIPR	Various	U	0	0	NONE	250	1Q FY04	0	NONE	0	250	0
ILS S - JSM-PDS and JSTDS Documentation Updates	MIPR	Various	U	0	0	NONE	300	1Q FY04	0	NONE	0	300	0
ES S - JSM-PDS and JSTDS Performance Specifications	MIPR	Various	U	0	0	NONE	400	1Q FY04	0	NONE	0	400	0
ES S - JSSDS Market Survey	MIPR	Various	U	0	0	NONE	0	NONE	200	1Q FY05	0	200	0
<b>JSSSED</b>													
ILS S - Develop Acquisition Logistics Plan JSSSED	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	0	NONE	980	2Q FY05	0	980	0
TD/D SB - Develop Acquisition Logistics Plan JSSEDI	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	300	3Q FY04	1000	2Q FY05	1300	2600	0
<b>Subtotal II. Support Costs:</b>													
				0	0		1400		2180		1300	4880	

Remarks:

Project DE4

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>DE4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JFDS</b>													
OTHT S - JSM-PDS and JSTDS Downselection Test Methodology Development	MIPR	Various	U	0	0	NONE	400	1Q FY04	0	NONE	0	400	0
OTHT S - JSM-PDS and JSTDS Operational Test Planning	MIPR	Various	U	0	0	NONE	421	1Q FY04	0	NONE	0	421	0
OTHT S - JSM-PDS and JSTDS Test and Evaluation Master Plan Development	MIPR	Various	U	0	0	NONE	420	1Q FY04	0	NONE	0	420	0
DTE S - Toxic Industrial Chemical and New Threat Agent Studies	MIPR	Various	U	0	0	NONE	0	NONE	1500	2Q FY05	0	1500	0
DTE S - Simulant Testing	MIPR	Various	U	0	0	NONE	0	NONE	1500	1Q FY05	0	1500	0
DTE S - Assess Potential for Wound Decontamination	MIPR	Various	U	0	0	NONE	0	NONE	658	1Q FY05	0	658	0
<b>JSED</b>													
OTHT SB - JSED - Block I Testing	MIPR	Various	U	350	334	2Q FY03	0	NONE	0	NONE	0	684	0
DTE S - Block I Developmental Testing	MIPR	AFOTEC, Kirtland AFB, NM	U	0	0	NONE	1337	2Q FY04	1708	2Q FY05	0	3045	0
OTHT S - Test Planning Block I	MIPR	Various	U	0	828	1Q FY03	925	1Q FY04	0	NONE	0	1753	0
OTHT S - JPID Developmental and Operational Testing	MIPR	Various		0	0	NONE	300	2Q FY04	3000	1Q FY05	0	3300	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>DE4</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal III. Test and Evaluation:				350	1162		3803		8366		0	13681	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSFDS</b>													
PM/MS S - Programmatic Support	C/CPFF	Various	C	0	0	NONE	350	1Q FY04	100	1Q FY05	0	450	0
PM/MS S - JSM-PDS and JSTDS RFP Development	MIPR	Various	U	0	0	NONE	350	1Q FY04	0	NONE	0	350	0
<b>JSSSED</b>													
PM/MS S - JSSSED - Service Integrated Product Team Support	MIPR	Various	U	2744	1478	1Q FY03	1220	1Q FY04	816	1Q FY05	0	6258	0
PM/MS C - Block I Operational Test (OT) Planning	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	0	NONE	1000	2Q FY05	0	1000	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	406	NONE	0	NONE	0	406	0
Subtotal IV. Management Services:				2744	1478		2326		1916		0	8464	

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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) DE4</b>	PROJECT <b>DE4</b>
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IV. Management Services - Cont.  
 Remarks:

TOTAL PROJECT COST:	4094	6480		24462		17886		1300	54222	
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Project DE4

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
Joint Service Stationary Decontamination System (JSSDS) Engineering and Logistics Studies									1Q	—————			4Q																			
JSSDS Market Survey													1Q																			
JSSDS MS B																					3Q											
Non-Personnel Decontamination Engineering and Logistics Studies									1Q	—————			4Q																			
Non-Personnel Decontamination Expanded Agent Testing													1Q	—————						1Q												
Non-Personnel Decontamination Simulant Testing													1Q	—————						1Q												
Personnel Decontamination Simulant Testing													1Q	—————						1Q												
Personnel Wound Decontamination Feasibility Assessment													1Q	—————						1Q												
Central Command Decontamination Urgent Need Statement Testing																													4Q			

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSSSED																																
XM25 Competitive Prototype Contract Award		2Q																														
XM25 Contract Effort (Phase I)		2Q	-----				3Q																									
XM25 Phase I Prototype Test				4Q		2Q																										
Optimization of Fluid System						3Q	-----				4Q																					
Pre Clean Decontamination System										2Q	-----				2Q																	
Pre Clean Military Utility Test														2Q	-----				4Q													
XM25 Development Test																4Q	1Q															
XM25 Operational Test																	1Q	2Q														
XM25 Milestone C Type Classification																			1Q													
JPID (JSSSED Block II/III) Milestone B preparation										1Q	-----				1Q																	
JPID Milestone B																2Q																
JPID Market Survey												3Q	4Q																			
JPID Compatability Material Identification										2Q	-----				1Q																	
JPID Industry Day												3Q																				
JPID Developmental Test (DT)																2Q	-----				3Q											

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>DE4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSSD (Cont)																																
JPID Milestone C																																
JPID Operational Test (OT)																																
JPID Initial Operational Capability (IOC)																																



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>HS4</b>
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	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
HS4      HOMELAND SECURITY (ACD&P)	3386	0	0	0	0	0	0	0	3386

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

**Project HS4 HOMELAND SECURITY (ACD&P):** The Homeland Security Advanced Component Development and Prototypes (ACD&P) program is focused on supporting a dual use operational capability for integrated biological surveillance, detection, and warning in the National Capital Region (NCR) with technology insertions for improved performance and response. The biological surveillance system will be used to detect and alert to a biological attack upon U.S. urban assets, thus gaining time for an earlier, more informed public health and law enforcement response. This capability will be achieved primarily through the fusion of environmental sampling/sensors and non-traditional detection using health, plant, and animal indicators. There are two approaches for early detection of a covert release of biological warfare pathogens. The first uses sensors and environmental sampling to identify biological agents within minutes to several hours, depending on the analysis processes used. The second approach consists of looking for early signs and symptoms of disease in human, animal, and plant populations. The program purpose is to integrate the two approaches to obtain a seamless early alerting capability for military and civilian populations.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
HOMELAND SECURITY (DEV/PROD/MGT)	3386	0	0
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>HS4</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 3386 Homeland Security - Developed models for urban biodetection in support of Biowatch program.</li> </ul> <p><b>Total 3386</b></p> <p><b>C. <u>Other Program Funding Summary:</u> N/A</b></p> <p><b>D. <u>Acquisition Strategy:</u></b></p> <p>HLS                      This program will utilize and leverage ongoing efforts in advanced development and existing procurement efforts, executed by the Program Executive Office for Chemical and Biological Defense (PEOCBD) as well as promising technologies identified by the Defense Threat Reduction Agency (DTRA) and the DoD Combating Terrorism Technology Task Force. The Chemical Biological Defense Program will provide guidance and oversight to ensure a comprehensive and fully coordinated effort.</p>		
Project HS4/Line No: 069	Page 98 of 155 Pages	Exhibit R-2a (PE 0603884BP)

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) HS4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HLS													
Homeland Security	PO			0	3386	NONE	0	NONE	0	NONE	0	3386	0
Subtotal I. Product Development:				0	3386		0		0		0	3386	

Remarks: HLS - Project is being executed by the U.S. Coast Guard component of the Department of Homeland Security

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)							DATE February 2004					
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>			PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>				PROJECT <b>HS4</b>					
TOTAL PROJECT COST:							0	3386	0	0	0	3386
Project HS4							Page 100 of 155 Pages		Exhibit R-3 (PE 0603884BP)			

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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>HS4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HLS																																
System Integration, Testing and Demonstration of Bio Detection Systems and Reagents					1Q <span style="color:red">————</span> 4Q																											

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IP4</b>	PROJECT <b>IP4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
IP4 INDIVIDUAL PROTECTION (ACD&P)	3300	0	0	0	0	0	0	0	3300

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

**Project IP4 INDIVIDUAL PROTECTION (ACD&P):** This project funds ACD&D of individual protection equipment aimed at improving current protection levels while reducing physiological and logistical burdens. The goal is to provide equipment that allows the individual soldier, sailor, airman, or marine to operate in a contaminated chemical and biological (CB) environment with no or minimal degradation to his/her performance. This project includes the Joint Service General Purpose Mask (JSGPM) and the Joint Service Aircrew Mask (JSAM). The JSGPM will reduce weight, bulk, and breathing resistance by as much as 50 percent over previously fielded masks. The JSGPM will also improve vision coupling, communication effectiveness, and comfort/wearability. The mask will significantly reduce total ownership cost/life cycle cost. The JSGPM will be low maintenance and priced to be classified as disposable/replaceable after decontamination.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS GENERAL PURPOSE MASK	3300	0	0
RDT&E Articles (Quantity)	0	0	0

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>IP4</b>
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**FY 2003 Accomplishments:**

- 3300 JSGPM - Conducted filtration research, barcoding implementation, and decontamination research.

**Total 3300**

<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
IP5 INDIVIDUAL PROTECTION (SDD)	36487	37719	24067	5436	970	0	8677	Cont	Cont
JN0011 AERP AIRCRAFT MODS	880	0	0	0	0	0	0	0	880
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	3115	0	0	0	0	0	0	0	3115
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	9459	8582	8196	8629	0	0	0	0	34866
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M	8815	0	0	0	0	0	0	0	8815
M99501 MASK, AIRCRAFT M45	991	0	0	0	0	0	0	0	991
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A	2486	0	0	0	0	0	0	0	2486

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>IP4</b>
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<b>C. <u>Other Program Funding Summary (Cont):</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
MA0400 PROTECTIVE CLOTHING	304611	73615	93650	92097	82902	86535	88913	Cont	Cont
MA0480 SECOND SKIN, MASK MCU-2/P	8142	0	0	0	0	0	0	0	8142
N00020 CB RESPIRATORY SYSTEM - AIRCREW	3073	0	0	0	0	0	0	0	3073

**D. Acquisition Strategy:**

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 (TOL).



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IP4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSGPM													
HW S - ACD&P Contract for Mask Design and Prototypes	C/CPFF	Avon Inc., Cadillac, MI	C	10766	3300	4Q FY03	0	NONE	0	NONE	0	14066	0
Subtotal I. Product Development:				10766	3300		0		0		0	14066	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSGPM													
ILS S - Conduct Sustainment Study for Prime Vendor Delivery and Contractor Logistics Support	MIPR	PM NBCDS, APG, MD	U	700	0	NONE	0	NONE	0	NONE	0	700	0
TD/D C - Prepare Program/Project Documentation	MIPR	PM NBCDS, APG, MD	U	2068	0	NONE	0	NONE	0	NONE	0	2068	0
Subtotal II. Support Costs:				2768	0		0		0		0	2768	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IP4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSGPM													
OTHT C - Conduct Engineering Design Test (EDT) Planning	MIPR	DTC, APG, MD; HRED, APG, MD	U	3614	0	NONE	0	NONE	0	NONE	0	3614	0
Subtotal III. Test and Evaluation:				3614	0		0		0		0	3614	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSGPM													
PM/MS S - Conduct Joint Program/Project Management	MIPR	PM NBCDS, APG, MD	U	2647	0	NONE	0	NONE	0	NONE	0	2647	0
Subtotal IV. Management Services:				2647	0		0		0		0	2647	

Remarks:

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IP4</b>	PROJECT <b>IP4</b>
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TOTAL PROJECT COST:	19795	3300		0		0		0	23095
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IP4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSAM																																
Advanced Component Development and Prototypes (ACD&P)	>>			4Q																												
PDRR Prototype Fabrication/Delivery	>>			2Q																												
ACD&P Prototype Government Test			2Q					2Q																								
Milestone B Systems Development and Demonstration Contract Award In Process Review (IPR) (IP5)								1Q																								
JSGPM																																
Documentation for Developmental Testing (DT) and Operational Testing (OT) Test			3Q									3Q																				
Developmental Testing (DT) PQT (Production Qualification Testing)												3Q				2Q																
Initial Evaluation Report																1Q																
Prepare and Execute Log Spt Plan			3Q													1Q																
Preparation of Milestone C Documentation			3Q													1Q																
Limited User Test (LUT)												4Q	1Q																			

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>IP4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSGPM (Cont)																																
Milestone C TC In Process Review (IPR)													2Q																			
Final Performance Specification												4Q																				
Production Contract Award													3Q																			
Production Begins													3Q																			
Material Release																3Q																
Multiservices Operational Test and Evaluation (MOT&E) with Production Representative Articles																2Q																
First Unit Equipped (FUE)/Initial Operational Capability (IOC)																				4Q												

Project IP4	Page 109 of 155 Pages	Exhibit R-4a (PE 0603884BP)
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>	PROJECT <b>IS4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
IS4 INFORMATION SYTEMS (ACD&P)	0	0	4548	0	0	0	0	0	4548

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

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

JOEF will be a near real-time course of action analysis software tool developed in blocks. Using a detailed NBC hazard prediction, JOEF will be capable of modeling the operational impact that results from an CBRN release or attack on fixed land assets, aerial ports of debarkation (Block I), seaports of debarkation (Block II), mobile land assets and littoral areas (Block III). This program was previously funded in CA4 prior to FY05.

IT Medical Surveillance will establish a biological defense information collection system that integrates available detection and diagnostic data, and fuses the information for commander/decision maker presentation and recommendations, and provides performance verification and validation capabilities.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
IT MEDICAL SURVEILLANCE	0	0	1000
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>	PROJECT <b>IS4</b>
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**FY 2005 Planned Program:**

- 833 IT Medical Surveillance - Establish an operational prototype biological defense information collection system which integrates medical and non-medical detection and diagnostic data. Verify and validate system performance during epidemics of infectious respiratory disease and for cases of Biological Warfare (BW) agent exposure.
- 167 IT Medical Surveillance - Demonstrate how the information gathered can be presented to decision makers so that an ultimate concept of operations can be developed by the combat developers.

**Total** 1000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT OPERATIONS EFFECTS FEDERATION	0	0	3548
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 596 JOEF Block I - Conduct Interim Progress Review (IPR). Perform financial management, scheduling, planning, and reporting. Continue CCB. Prepare for MS C.
- 952 JOEF Block I - Continue formal software development and deliver software for Development Test (DT)/Operational Test (OT). Update engineering, T&E and logistics documentation, continue PDSS planning.
- 2000 JOEF Block I - CPIF contract for Block I development with options to support development of Blocks II and III.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>	PROJECT <b>IS4</b>
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**FY 2005 Planned Program (Cont):**  
**Total 3548**

<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	0	1104	5937	16703	30670	24308	0	0	78722
IS5 INFORMATION SYSTEMS (SDD)	0	0	18742	7105	1419	982	0	0	28248
JC0208 JOINT EFFECTS MODEL (JEM)	0	0	998	998	999	500	0	0	3495
JC0209 JOINT OPERATIONAL EFFECTS FEDERATION (JOEF)	0	0	0	0	749	750	0	0	1499



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>IS4</b>
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**D. Acquisition Strategy:**

JOEF                      JOEF will be developed in three blocks. Block I provides an M&S analysis capability for assessing "fighter type" air base operability and aerial ports of debarkation (APODs). Output centered on sortie generation and cargo throughput respectively. Interoperable with Joint Warfare System (JWARS) Block I and will provide initial tools and data analysis to support CBD ORMS. Block II will further extend capabilities to include seaports of debarkation (SPODs) and other land based fixed site targets (e.g., depots) and will include: cargo throughput and manpower/hardware consideration trade-offs as well as the capability to link output to theater and campaign level models. Block III will add capabilities to include mobile land and littoral forces and will provide links into manpower, logistics and training planning architectures. A cost plus incentive fee contract will be utilized for the Block I effort with options to support Block II and III.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2004</b>			
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>							PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>							PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IT SURV													
SW C - Establish an operational prototype biological defense information collection system	C/CPFF	TBD	C	0	0	NONE	0	NONE	1000	2Q FY05	0	1000	0
JOEF													
SW S - Engineering Builds - Development, Design and Coding	C/CPIF	TBD	C	0	0	NONE	0	NONE	2000	2Q FY05	0	2000	0
Subtotal I. Product Development:				0	0		0		3000		0	3000	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
DTE S - JOEF - Developmental Testing	MIPR	Various	U	0	0	NONE	0	NONE	49	May-05	0	49	720
OTE S - JOEF - Operational Testing	MIPR	Various	U	0	0	NONE	0	NONE	51	Jun-05	250	301	1258
OTHT S - JOEF - Independent Verification and Validation	C/FFP	TBS	C	0	0	NONE	0	NONE	750	Feb-05	500	1250	1250
Subtotal III. Test and Evaluation:				0	0		0		850		750	1600	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JOEF													
PM/MS S - Program Mgt Office - Planning and Programming	MIPR			0	0	NONE	0	NONE	342	1Q FY05	0	342	0
Subtotal IV. Management Services:				0	0		0		342		0	342	

Remarks:

TOTAL PROJECT COST:	0	0		0		4548		750	5298	
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) IS4</b>	PROJECT <b>IS4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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			4Q																									
BLK I - Milestone B											2Q																					
BLK I - Award Systems Development and Demonstration (SDD) Contract											2Q																					
BLK I - Software Development											2Q			3Q																		
BLK I - Early Operational Assessment (EOA)												4Q																				

Project IS4	Page 118 of 155 Pages	Exhibit R-4a (PE 0603884BP)
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	36057	64743	34968	45128	38518	18788	9553	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), Plague (Yersinia Pestis), and Equine Encephalitis vaccines.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TECHNOLOGY TRANSFER MEDICAL SYSTEMS	0	0	1000
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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**FY 2005 Planned Program:**

- 1000 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** 1000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BOTULINUM VACCINE	11617	25041	24369
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 2814 JVAP - Recombinant Botulinum Vaccine - Completed manufacturing process development including initial adjuvant formulation studies (Block I).
- 6193 JVAP - Recombinant Botulinum Vaccine - Completed current Good Manufacturing Practices (cGMP) pilot lot manufacturing of serotype A and initiated final container stability testing (Block I).
- 1964 JVAP - Recombinant Botulinum Vaccine - Initiated non-clinical studies for bivalent (serotypes A&B) vaccine (Block I).
- 646 JVAP - Recombinant Botulinum Vaccine - Initiated planning and preparation for Phase 1 clinical trial (Block I).

**Total** 11617



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b> PROJECT <b>MB4</b>
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**FY 2004 Planned Program:**

- 456 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and final container stability testing (Block I).
- 200 JVAP - Recombinant Botulinum Vaccine - Submit IND application (Block I).
- 2048 JVAP - Recombinant Botulinum Vaccine - Initiate Phase 1 clinical trial execution and monitoring (Block I).
- 13231 JVAP - Recombinant Botulinum Vaccine - Initiate process validation, to include qualification and validation of fermentation and purification processes for the manufacture of serotypes A and B (Block I).
- 6200 JVAP - Recombinant Botulinum Vaccine - Funding will support assay development, small-scale manufacturing process development, and cGMP master cell bank production of recombinant serotypes C, E, and F of the multivalent botulinum vaccine (Block II). The Operational Requirements Document (ORD) specifies battlefield protection of the warfighter against botulinum serotypes A, B, C, E, and F. Current funding supports licensure of a bivalent A, B vaccine only (Block I). Funding will facilitate a significant upgrade to the bivalent vaccine under development and provide an enhanced level of protection.
- 2906 JVAP - Biological Defense Development - Initiate polyclonal antibody production for proof of concept in non-clinical trials for botulinum antitoxin.

**Total** 25041

**FY 2005 Planned Program:**

- 15849 JVAP - Recombinant Botulinum Vaccine - Continue process validation efforts for serotypes A and B (Block I).

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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**FY 2005 Planned Program (Cont):**

- 3320 JVAP - Recombinant Botulinum Vaccine - Complete Phase 1 clinical trial and receive final report (Block I) in preparation for Milestone B.
- 200 JVAP - Recombinant Botulinum Vaccine - Complete non-clinical studies and continue stability testing (Block I).
- 5000 JVAP - Recombinant Botulinum Vaccine - Complete manufacturing scale-up activities.

**Total** 24369

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ENCEPHALITIS VACCINE	6000	5932	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 1140 JVAP - Equine Encephalitis Vaccines - Continued Venezualen Equine Encephalitis (VEE) 1AB vaccine assay development and qualification.
- 1080 JVAP - Equine Encephalitis Vaccines - Continued stability and lot release testing on VEE 1 AB vaccine pilot lot for non-clinical studies.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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**FY 2003 Accomplishments (Cont):**

- 3420 JVAP - Equine Encephalitis Vaccines - Conducted non-human primate neurovirulence testing and equine safety study of the VEE 1AB vaccine.
- 360 JVAP - Equine Encephalitis Vaccines - Initiated cGMP manufacture of VEE 1 AB vaccine lot for clinical use.

**Total** 6000

**FY 2004 Planned Program:**

- 1038 JVAP - Equine Encephalitis Vaccines - Complete assay development and qualification and complete lot release testing on the VEE 1 AB vaccine cGMP pilot lot.
- 2694 JVAP - Equine Encephalitis Vaccines - Initiate Phase 1 clinical trial on the VEE 1 AB vaccine.
- 200 JVAP - Equine Encephalitis Vaccines - Submit IND application for the VEE 1 AB vaccine.
- 2000 JVAP - Equine Encephalitis Vaccines - Complete VEE 1 AB vaccine cGMP lot for clinical use.

**Total** 5932

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NEXT GENERATION ANTHRAX VACCINE	1482	5752	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) MB4</b>
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**FY 2003 Accomplishments:**

- 179 JVAP - NGA Vaccine - Continued process definition work for a candidate recombinant protective antigen NGA vaccine.
- 415 JVAP - NGA Vaccine - Conducted assay development and product stability studies.
- 200 JVAP - NGA Vaccine - Initiated and completed cGMP pilot lot production.
- 688 JVAP - NGA Vaccine - Initiated Phase 1 clinical trial.

**Total** 1482

**FY 2004 Planned Program:**

- 3752 JVAP - NGA Vaccine - Complete Phase 1 clinical trial.
- 2000 JVAP - NGA Vaccine - Conduct studies for alternative delivery systems including oral adjuvants. Initiate development of an orally-delivered anthrax-plague vaccine.

**Total** 5752

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
PLAGUE VACCINE	7447	26978	9599
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 6134 JVAP - Plague Vaccine - Continued process development efforts to include: optimization, formulation, and stability studies. Initiated manufacture of demonstration runs, conducted process transfer, and continued assay development and validation.</li> <li>• 910 JVAP - Plague Vaccine - Initiated animal immunogenicity studies and non-clinical testing.</li> <li>• 403 JVAP - Plague Vaccine - Initiated bulk stability, container stability, and reconstitution stability testing on process development material.</li> </ul> <p><b>Total 7447</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2180 JVAP - Plague Vaccine - Continue stability testing and initiate non-clinical testing.</li> <li>• 10138 JVAP - Plague Vaccine - Conduct manufacture of cGMP pilot lot.</li> <li>• 3000 JVAP - Plague Vaccine - Initiate toxicology testing.</li> <li>• 11400 JVAP - Plague Vaccine - Perform animal efficacy studies and clinical trial on the UK vaccine candidate product in order to collect data for a down-select decision.</li> <li>• 260 JVAP - Plague Vaccine - Prepare and submit IND application to FDA.</li> </ul> <p><b>Total 26978</b></p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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**FY 2005 Planned Program:**

- 4359 JVAP - Plague Vaccine - Continue non-clinical studies to include animal efficacy studies on US candidate.
- 490 JVAP - Plague Vaccine - Continue stability testing on US candidate.
- 4750 JVAP - Plague Vaccine - Initiate Phase 1 clinical trial on US candidate.

**Total** 9599

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TULAREMIA VACCINE	9511	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 4156 JVAP - Tularemia Vaccine - Completed cGMP pilot lot production and conducted final container stability testing of pilot lot.
- 3755 JVAP - Tularemia Vaccine - Completed characterization studies and completed initial development of surrogate marker of efficacy assay.
- 1600 JVAP - Tularemia Vaccine - Completed immunogenicity and toxicity studies.

**Total** 9511

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) MB4</b>	PROJECT <b>MB4</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	1040	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 1040 SBIR - Small Business Innovative Research

**Total** 1040

**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	42717	62629	80789	56623	57272	60695	59478	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	34819	7264	7810	3643	14930	58935	71855	Cont	Cont

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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**D. Acquisition Strategy:**

- 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 TUL            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 FY04 and FY05 funding for Tularemia has been removed. The DoD Tularemia program has been terminated and transferred to the Department of Health and Human Services (DHHS).



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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT MED													
Initiate Technology Transition	C/FFP	TBD	C	0	0	NONE	0	NONE	600	2Q FY05	0	600	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	7991	1Q FY03	11900	1Q FY04	17072	1Q FY05	0	36963	0
VAC ENC													
SW SB - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	3259	1Q FY03	1959	1Q FY04	0	NONE	0	5218	0
VAC NGA													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	522	1Q FY03	1343	1Q FY04	0	NONE	0	1865	0
VAC PLG													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	4959	1Q FY03	13176	1Q FY04	3043	1Q FY05	0	21178	0
VAC TUL													
SW SB - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	2136	1Q FY03	0	NONE	0	NONE	0	2136	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal I. Product Development:				0	18867		28378		20715		0	67960	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 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	0	0	NONE	4373	1Q FY04	1387	1Q FY05	0	5760	0
VAC ENC													
TD/D SB - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	951	1Q FY04	0	NONE	0	951	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) MB4</b>	<b>PROJECT</b> <b>MB4</b>
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC NGA													
TD/D SB - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	578	1Q FY04	0	NONE	0	578	0
VAC PLG													
TD/D SB - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	4817	1Q FY04	1582	1Q FY05	0	6399	0
Subtotal II. Support Costs:				0	0		10719		2969		0	13688	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT MED													
Development Testing	MIPR	TBD	U	0	0	NONE	0	NONE	350	2Q FY05	0	350	0
VAC BOT													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1658	1Q FY03	6259	1Q FY04	2815	1Q FY05	0	10732	0
VAC ENC													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1040	1Q FY03	1327	1Q FY04	0	NONE	0	2367	0
VAC NGA													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	450	1Q FY03	2081	1Q FY04	0	NONE	0	2531	0
VAC PLG													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1104	1Q FY03	6162	1Q FY04	3063	1Q FY05	0	10329	0
VAC TUL													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	6209	1Q FY03	0	NONE	0	NONE	0	6209	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal III. Test and Evaluation:				0	10461		15829		6228		0	32518	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TT MED													
Management Support and Planning	C/FFP	TBD	C	0	0	NONE	0	NONE	50	2Q FY05	0	50	0
VAC BOT													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	164	3Q FY03	399	4Q FY04	360	4Q FY05	0	923	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	166	2Q FY03	455	4Q FY04	581	4Q FY05	0	1202	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	130	2Q FY03	0	NONE	0	NONE	0	130	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	45	2Q FY03	0	NONE	0	NONE	0	45	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Award Fee (Maximum 10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1463	1Q FY03	1052	1Q FY04	1400	1Q FY05	0	3915	0
PM/MS SB - Program Management	C/CPFF	TBS	C	0	0	NONE	603	3Q FY04	754	1Q FY05	0	1357	0
VAC ENC													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	136	3Q FY03	217	4Q FY04	0	NONE	0	353	0
PM/MS S - Vaccine Development-Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	137	2Q FY03	122	4Q FY04	0	NONE	0	259	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	107	2Q FY03	0	NONE	0	NONE	0	107	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	37	2Q FY03	0	NONE	0	NONE	0	37	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1284	1Q FY03	1051	1Q FY04	0	NONE	0	2335	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Program Management	C/CPFF	TBS	C	0	0	NONE	305	3Q FY04	0	NONE	0	305	0
VAC NGA													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program	Allot	JPEO, Falls Church, VA	U	0	20	2Q FY03	259	4Q FY04	0	NONE	0	279	0
PM/MS S - Vaccine Development - PM Support	Allot	CBMS, Fort Detrick, MD	U	0	21	3Q FY03	290	4Q FY04	0	NONE	0	311	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	17	2Q FY03	0	NONE	0	NONE	0	17	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	6	2Q FY03	0	NONE	0	NONE	0	6	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	446	1Q FY03	773	1Q FY04	0	NONE	0	1219	0
PM/MS S - Program Management	C/CPFF	TBS	C	0	0	NONE	428	3Q FY04	0	NONE	0	428	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support.	Allot	JPEO, Falls Church, VA	U	0	106	2Q FY03	524	4Q FY04	288	4Q FY05	0	918	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MB4</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	105	3Q FY03	394	4Q FY04	255	4Q FY05	0	754	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	83	2Q FY03	0	NONE	0	NONE	0	83	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	29	2Q FY03	0	NONE	0	NONE	0	29	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1061	1Q FY03	1239	1Q FY04	836	1Q FY05	0	3136	0
PM/MS S - Program Management	C/CPFF	TBS	C	0	0	NONE	666	3Q FY04	532	1Q FY05	0	1198	0
<b>VAC TUL</b>													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	134	3Q FY03	0	NONE	0	NONE	0	134	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	135	2Q FY03	0	NONE	0	NONE	0	135	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>
<b>PROJECT</b> <b>MB4</b>	

IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	106	2Q FY03	0	NONE	0	NONE	0	106	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	37	2Q FY03	0	NONE	0	NONE	0	37	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	754	1Q FY03	0	NONE	0	NONE	0	754	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	1040	NONE	0	NONE	0	1040	0
Subtotal IV. Management Services:				0	6729		9817		5056		0	21602	

Remarks:

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) MB4</b>	PROJECT <b>MB4</b>
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TOTAL PROJECT COST:	0	36057		64743		34968		0	135768	
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<b>Exhibit R-4a, Schedule Profile</b>							DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MB4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VAC BOT																																
Process Development																																
Current Good Manufacturing Practice (cGMP) Pilot Lot																																
Non-Clinical Testing																																
Investigational New Drug (IND) Application Submission																																
Phase 1 Clinical Trial (A/B)																																
Milestone B																																
Phase 2a Clinical Trial																																
VAC ENC																																
Non-Clinical Testing																																
Investigational New Drug (IND) Application																																
Phase 1 Clinical Trials																																
Milestone B																																
VAC NGA																																

Project MB4	Page 139 of 155 Pages	Exhibit R-4a (PE 0603884BP)
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**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET 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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009									
	1	2	3	4	1	2	3	4	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 NGA (Cont)																																						
Non-Clinical Testing	>>	—————												3Q																								
Investigational New Drug (IND) Application				4Q																																		
Process Development					1Q	—————												2Q																				
Phase 1 Clinical Trial						2Q	—————												3Q																			
Current Good Manufacturing Processes (cGMP) Pilot Lot					1Q	———												3Q																				
VAC PLG																																						
Process Development					1Q	—————												3Q																				
Non-Clinical Testing						2Q	—————												1Q																			
Current Good Manufacturing Practices (cGMP) Pilot Lot									1Q	———												4Q																
Investigational New Drug (IND) Application Submission													4Q																									
Phase 1 Clinical Trial													1Q	———												1Q												
Milestone B																	1Q																					

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET 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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Phase 2a Clinical Trial																																
VAC TUL																																
Process Development					>>			1Q																								
Current Good Manufacturing Practice (cGMP) Pilot Lot								1Q				4Q																				

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
MC4      MEDICAL CHEMICAL DEFENSE (ACD&P)	1642	3760	14780	4499	4539	4564	4614	Continuing	Continuing

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

**Project MC4 MEDICAL CHEMICAL DEFENSE (ACD&P):** This project funds Advanced Component Development and Prototypes (ACD&P) of countermeasures for chemical agents including life support equipment, diagnostic equipment, pretreatment 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 Advanced Anticonvulsant System (AAS), which will be used as a treatment for seizures from exposure to nerve agents, Next Generation Oxime (NGO), which will be used as a treatment for nerve agent intoxication, new indications for Pyridostigmine Bromide (PB), which will be integrated with current therapeutic regimens, and a Chemical Agent Facility, which will be used to test and evaluate medical chemical defense products under Good Laboratory Practices (GLP) conditions.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MEDICAL CHEMICAL DEFENSE	1642	3696	9780
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 843 Advanced Anticonvulsant - Initiated optimum serum levels of midazolam and neuropathological analysis studies in non-human primate models.
- 799 Advanced Anticonvulsant - Initiated documentation for Investigational New Drug (IND) application.

**Total** 1642

**FY 2004 Planned Program:**

- 670 Advanced Anticonvulsant - Continue optimum serum levels of midazolam and neuropathological analysis studies in non-human primate models.
- 351 Advanced Anticonvulsant - Conduct pre-IND/regulatory strategy with the FDA.
- 1175 Advanced Anticonvulsant - Initiate rodent and non-human primates pre-clinical studies under Good Laboratory Practices (GLP) guidelines, and initiate acute toxicology study regarding intramuscular use of midazolam.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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**FY 2004 Planned Program (Cont):**

- 1500 Next Generation Oxime - Initiate process development/current Good Manufacturing Practices (cGMP) pilot lots and initiate acute toxicology and stability studies.

**Total** 3696

**FY 2005 Planned Program:**

- 1337 Advanced Anticonvulsant - Complete FDA IND/regulatory strategy.
- 686 Advanced Anticonvulsant - Complete optimum serum levels of midazolam and neuropathological analysis studies in non-human primate models, rodent and non-human primates pre-clinical studies under GLP guidelines, and acute toxicology study regarding intramuscular use of midazolam.
- 3000 Next Generation Oxime - Complete non-human primate oxime studies and process development/cGMP pilot lots and acute toxicology and stability studies; prepare documentation for IND application; and initiate human safety studies.
- 1251 Advanced Anticonvulsant - Initiate and complete animal efficacy studies.
- 2182 Advanced Anticonvulsant - Initiate development of manufacturing processes.
- 1324 Advanced Anticonvulsant - Initiate clinical study of therapeutic dosage and maximum tolerable human dose study.

**Total** 9780



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NTA MEDICAL COUNTERMEASURES	0	0	5000
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 2473 Chemical Agent Facility - Initiate test and evaluation of medical chemical defense products under GLP conditions in a chemical agent research and development facility against traditional and non-traditional agents.
- 1529 Pyridostigmine Bromide (PB) New Indications - Initiate animal studies to demonstrate efficacy of against non-traditional agents.
- 998 Advanced Anticonvulsant - Initiate human safety studies.

**Total** 5000

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	64	0
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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**FY 2004 Planned Program:**

- 64 SBIR - Small Business Innovative Research

**Total**      64

<b>C. <u>Other Program Funding Summary:</u></b>								<u>To Compl</u>	<u>Total Cost</u>
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1778	1439	1423	7163	7199	7555	6269	Cont	Cont

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>

**D. Acquisition Strategy:**

MEDCHEM

These Advanced Component Development and Prototypes (ACD&P) and System Development and Demonstration (SDD) efforts are designed to develop, license, and field prophylactic and therapeutic drugs, diagnostic equipment, and other life support equipment for protection against and management of chemical warfare agent intoxication. Non-traditional medical countermeasure efforts will include a chemical agent facility, which will test and evaluate medical chemical defense products under Good Laboratory Practices (GLP). The current acquisition strategy of in-house development and the use of prime contractors will be continued for the development of the Advanced Anticonvulsant System (AAS) and Next Generation Oxime (NGO). Although Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), Antidote Treatment - Nerve Agent, Autoinjector (ATNAA), and Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP) have been approved by the FDA, additional post marketing studies were imposed by the FDA and will be completed within the next several years. New indications for Pyridostigmine Bromide (PB) will be integrated with current therapeutic regimens. In FY04, SERPACWA will transition to Defense Supply Center Philadelphia for follow-on procurement.

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P) MC4</b>	PROJECT <b>MC4</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MEDCHEM													
SW SB - AAS Manufacturing Processes	C/FFP	TBS	C	0	0	NONE	0	NONE	1933	3Q FY05	0	1933	0
Subtotal I. Product Development:				0	0		0		1933		0	1933	

Remarks:



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MC4</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>MEDCHEM</b>													
OTHT SB - AAS Serum Level and Neuropathological Studies	MIPR	USAMRAA, Fort Detrick, MD	U	0	207	4Q FY03	101	1Q FY04	0	NONE	0	308	0
OTHT SB - AAS Serum Level and Neuropathological Studies, Non-Human Primate, and Acute Toxicology Studies	MIPR	USAMRICD, Edgewood, MD	U	0	349	4Q FY03	372	2Q FY04	551	1Q FY05	0	1272	0
OTHT C - AAS GLP Animal Studies	MIPR	USAMRAA, Fort Detrick, MD	U	0	0	NONE	956	2Q FY04	0	NONE	0	956	0
OTHT C - Oxime Process Development and GMP Pilot Lots	C/CPFF	TBS	C	0	0	NONE	574	3Q FY04	0	NONE	0	574	0
OTHT S - Oxime Acute Toxicology and Stability Testing	C/CPFF	TBS	C	0	0	NONE	496	3Q FY04	0	NONE	0	496	0
DTE S - Oxime Non-Human Primate and Human Safety Studies	MIPR	USAMRAA, Fort Detrick, MD	U	0	0	NONE	0	NONE	1576	2Q FY05	0	1576	0
DTE SB - AAS IND Application Required Studies	C/CPFF	TBS	C	0	0	NONE	0	NONE	492	3Q FY05	0	492	0
DTE S - AAS Animal Efficacy Study	C/CPFF	TBS	C	0	0	NONE	0	NONE	1002	1Q FY05	0	1002	0
DTE S - AAS Human Species and Therapeutic Dosage Studies	C/CPFF	TBS	C	0	0	NONE	0	NONE	1075	1Q FY05	0	1075	0

<b>Project MC4</b>	<b>Page 150 of 155 Pages</b>	<b>Exhibit R-3 (PE 0603884BP)</b>
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA4 - Advanced Component Development and Prototypes</b> <b>(ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	<b>PROJECT</b> <b>MC4</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>MEDCHEM</b>													
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	6	2Q FY03	0	NONE	0	NONE	0	6	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	18	2Q FY03	0	NONE	0	NONE	0	18	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	206	3Q FY03	320	4Q FY04	376	4Q FY05	0	902	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	343	2Q FY03	96	4Q FY04	293	4Q FY05	0	732	0
PM/MS S - Program Management Support	C/CPFF	TBS	C	0	0	NONE	471	3Q FY04	826	1Q FY05	0	1297	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	64	1Q FY04	0	NONE	0	64	0
Subtotal IV. Management Services:				0	573		951		1495		0	3019	

Remarks:

Project MC4



<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Advanced Component Development and Prototypes (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b> PROJECT <b>MC4</b>
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TOTAL PROJECT COST:	0	1642		3760		14780		0	20182
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA4 - Advanced Component Development and Prototypes          (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
AAS - Pre-Clinical Studies					2Q	—————			4Q																							
AAS - Investigational New Drug (IND) Application Submittal												4Q																				
AAS - Non-Clinical Trials					2Q	—————						3Q																				
AAS - Phase 1 Trials												4Q	—————		1Q																	
AAS - Phase 2 Trials															1Q	—————		1Q														
AAS - Current Good Manufacturing Practices (cGMP)/Testing															1Q	—————					1Q											
AAS - New Drug Application (NDA) Submission																														1Q		
NGO - Milestone A												2Q																				
NGO - Current Good Manufacturing Processes (cGMP) Process Development												2Q	—————		4Q																	
NGO - Acute Toxicology Tests												2Q	—————		1Q																	
NGO - Investigational New Drug (IND) Application																																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA4 - Advanced Component Development and Prototypes                  (ACD&amp;P)</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</b>	PROJECT <b>MC4</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
NGO - Conduct Phase I Clinical Study																	2Q	3Q														
NGO - Milestone B																									1Q							
NGO - File NDA																													3Q			
NGO - Milestone C																													1Q			
Chemical Agent Facility													2Q	—————												4Q						
PB New Indications - Animal Studies													2Q	—————		1Q																

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**BUDGET ACTIVITY 5**  
**SYSTEM DEVELOPMENT AND DEMONSTRATION**  
**(SDD)**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>
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	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
COST (In Thousands)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost	168723	176337	152379	72702	58133	93488	114511	Continuing	Continuing
BJ5 BIOLOGICAL DEFENSE (SDD)	16185	0	0	0	0	0	0	0	16185
CA5 CONTAMINATION AVOIDANCE (SDD)	69977	112432	70136	39138	23627	13438	20204	Continuing	Continuing
CM5 HOMELAND DEFENSE (SDD)	956	5974	24274	389	0	0	0	0	31593
CO5 COLLECTIVE PROTECTION (SDD)	4106	2923	2590	4118	4576	2668	2724	Continuing	Continuing
DE5 DECONTAMINATION SYSTEMS (SDD)	4415	8586	3337	5710	5412	9910	4782	Continuing	Continuing
IP5 INDIVIDUAL PROTECTION (SDD)	36487	37719	24067	5436	970	0	8677	Continuing	Continuing
IS5 INFORMATION SYSTEMS (SDD)	0	0	18742	7105	1419	982	0	0	28248
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	34819	7264	7810	3643	14930	58935	71855	Continuing	Continuing
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1778	1439	1423	7163	7199	7555	6269	Continuing	Continuing

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> 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.</p> <p>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.</p> <p>Weapons of Mass Destruction Civil Support Team (WMD CST) efforts provide for testing and development of a Unified Command Suite (UCS) and a Analytical Laboratory Platform (ALS) for these teams.</p>		
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<p>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.</p> <p>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.</p> <p>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.</p>		
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<b>B. <u>Program Change Summary:</u></b>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget (FY 2004 PB)		172262	148017	83325
Current Biennial Budget Estimates (FY 2005)		168723	176337	152379
Total Adjustments		-3539	28320	69054
a. Congressional General Reductions		0	-1580	0
b. Congressional Increases		0	300	0
c. Reprogrammings		-716	29600	0
d. SBIR/STTR Transfer		-2498	0	0
e. Other Adjustments		-325	0	69054

**Change Summary Explanation:**

**Funding:** FY04 - Congressional adjustments for CBD (+\$6,653K CA5; -\$2,653K DE5; -\$4,200K IP5; +\$500K MC5).

FY04 - Proposed reprogrammings from CBDP Defense Wide procurement account to support risk reduction (+\$24,600K CA5 (+\$6,300K JCAD; +\$12,000K JSLSCAD; +\$6,300K JWARN); +\$5,000K CM5).

FY05 - Funding to realign programs to support risk reduction (+\$43,100K CA5 (+\$7,000K JCAD; +\$14,400K JSLNBCRS; +\$20,000K JSLSCAD; +\$1,700K JWARN); +\$10,000K CM5; +\$3,000K IP5 JSGPM).

FY05 - Funding changes to support high priority efforts (+\$7,800K CA5 (+\$2,900K JBSDS; +\$4,900K JWARN); +\$4,700K MB5 JBAIDS); other adjustments +\$454K).

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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>
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**Funding (cont.)**

FY05 - Realigns funds from CA5 to IS5 (-\$18,742K CA5; +\$18,742K IS5).

**Schedule:**

**Technical:**

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>BJ5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
BJ5 BIOLOGICAL DEFENSE (SDD)	16185	0	0	0	0	0	0	0	16185

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

**Project BJ5 BIOLOGICAL DEFENSE (SDD):** The Department of Defense's (DoD) Biological Defense mission requires the detection and identification of biological threat agents to provide early-warning capabilities to mobile forces and high-value, fixed-site assets. This detection system concept will provide detection, identification, warning, and sample collection for verification of large area and point source biological agent attacks.

The Joint Biological Point Detection System (JBPDS) program is an evolutionary advancement of the Army Biological Integration Detection System (BIDS), Navy Interim Biological Agent Detection System (IBADS), and Air Force and Marine Corps Service-specific development programs. The JBPDS suite will be integrated onto Service-specific platforms (e.g., Joint Service Lightweight NBC Reconnaissance System (JSLNBCRS), Army Nuclear Biological Chemical Reconnaissance Vehicle (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 common detection system employed by all services, thus greatly enhancing Joint Service interoperability. 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 (JBPDS BLKII program) will be used to take advantage of emerging technologies and to provide the Services with enhanced bio detection performance at lower life cycle costs.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>BJ5</b>
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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 FY04.

The Critical Reagents Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/select agent panels/DNA biological detection requirements from Advanced Component Development and Prototype (ACD&P) 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 Joint Biological Stand-off Detection System (JBSDS) will be employed to provide remote detection of biological hazards and will provide early warning via the Joint Warning and Reporting Network (JWARN). JBSDS will augment and integrate with existing biological detection systems to provide a biological detection 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 level. The program will transition from BJ5 to MB5 starting in FY04.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CRITICAL REAGENTS PROGRAM	1992	0	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>BJ5</b>
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**FY 2003 Accomplishments:**

- 972 CRP - Continued transition of International Task Force (ITF)-6B targets. Maintained reagent repositories and validation processes.
- 1020 CRP - Transitioned eight (out of 60) Nucleic Acid Assays, developed validation, and performed conformance testing protocols in support of ongoing Homeland Defense/National Capital Region bio-detection efforts.

**Total** 1992

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
INTERIM BIO AGENT DETECTOR SYS (IBADS)	388	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 388 IBADS - Continued to provide engineering and technical support to maintain fielded systems.

**Total** 388

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	4575	0	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>BJ5</b>
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**FY 2003 Accomplishments:**

- 2375 JBPDS BLKI - Completed Multi-Service Initial Operational Test and Evaluation (MOT&E) Phase I for US Army. Initiated MOT&E Phases II-IV for US Air Force (USAF), US Marines Corp (USMC) and US Navy (USN).
- 400 JBPDS BLK1 - Completed Military Utility Assessment for Dry Filter Units.
- 1800 JBPDS BLK1 - Continue reliability, availability and Maintainability (RAM) growth towards meeting objective requirements including Built in Test (BIT).

**Total** 4575

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	9230	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 5276 JBSDS - Initiated the transition of the early warning stand-off systems developed in the TT-Bio program into the Systems Integration phase of the JBSDS program. This included software development, modeling and simulation analysis, and preparation of program documentation.
- 1954 JBSDS - Initiated and completed Developmental Testing (DT) of competing candidate systems.
- 2000 JBSDS - Initiated limited Operational Testing (OT) and assessment of JBSDS competing candidate systems.

**Total** 9230

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>BJ5</b>
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**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	0	1104	5937	16703	30670	24308	0	0	78722
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	89482	0	0	0	0	0	0	0	89482
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	2959	0	0	0	0	0	0	0	2959
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	10569	44472	50664	72126	79680	38892	38879	Cont	Cont

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<p><b>D. <u>Acquisition Strategy:</u></b></p> <p>CRP                      The Critical Reagents Program (CRP) is a consolidation of all antibody/antigen 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 program 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 FY04-09 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 manufacturer. The HHA production was awarded 2QFY03. 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&amp;T) transition strategy with the end goal of horizontally integrated reagent improvements. New DNA-based detection methods such as polymerase chain reaction (PCR) were supported as of FY03. Expansion of Gold Standard Reference Panels in support of ongoing detection reagent validation will be a major focus between FY04 and FY10.</p>		
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IBADS	Technical support and maintenance of 13 fielded systems.	
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 total ownership cost, will be supplied to field units throughout the LRIP phase, until new Full Rate Production (FRP) systems or LRUs are developed and made available to meet a broader range of warfighter requirements.	
JBSDS	The JBSDS will use an evolutionary acquisition strategy with phased developments for the JBSDS program supporting time-phased JORD requirements. JBSDS will provide an operationally useful and supportable capability in as short a time as possible. Initial 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 will result in a selection of a single system to enter Low Rate Initial Production to support the government testing program. The next generation JBSDS follow-on development contract will be competitively awarded with emphasis on increasing sensitivity, range, and reliability, while reducing acquisition life cycle costs, weight, power requirements, and size. The system is to be used by all Services, thus reducing acquisition life cycle costs.	
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>BJ5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
HW C - Transition of ITF-6B and Insertion of ITF-6B Reagents into End Assay Formats	MIPR	Naval Medical Research Center, Edgewood, MD	U	921	0	NONE	0	NONE	0	NONE	0	921	0
HW C - Antigen Development	MIPR	Dugway Proving Ground, Dugway, UT	U	0	300	2Q FY03	0	NONE	0	NONE	0	300	0
HW C - HHA and Antibody Upgrades	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	68	3Q FY03	0	NONE	0	NONE	0	68	0
HW C - New Assays and Antigens	MIPR	USAMRIID, Fort Detrick, MD	U	0	234	2Q FY03	0	NONE	0	NONE	0	234	0
JBPDS													
HW S - Reliability, Availability, and Maintainability Growth	C/FFP	GD ATP, DeLand, FL	C	0	1800	3Q FY04	0	NONE	0	NONE	0	1800	0
JBSDS													
HW S - Develop Initial JBSDS Prototypes	C/CPFF	Fibertek, Herndon, VA	C	3866	1414	2Q FY03	0	NONE	0	NONE	0	5280	0
HW S - Develop Initial JBSDS Prototypes	C/CPFF	SESI, Burtonsville, MD	C	2200	1414	2Q FY03	0	NONE	0	NONE	0	3614	0
Subtotal I. Product Development:				6987	5230		0		0		0	12217	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>BJ5</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
TD/D SB - Critical Reagent Product	MIPR	Naval Medical Research Center, Edgewood, MD	U	600	0	NONE	0	NONE	0	NONE	0	600	0
TD/D SB - CRP Repository	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	245	2Q FY03	0	NONE	0	NONE	0	245	0
TD/D SB - PCR Conformance Lab	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	250	3Q FY03	0	NONE	0	NONE	0	250	0
IBADS													
ILS S - Continued Support of Fielded IBAD Systems	MIPR	NSWC, Dahlgren, VA	U	901	370	1Q FY03	0	NONE	0	NONE	0	1271	0
JBSDS													
ES S - Modeling and Simulation	MIPR	BSM, Inc., Kennett Square, PA	F	0	161	2Q FY03	0	NONE	0	NONE	0	161	0
TD/D S - Modeling and Test Support	MIPR	NSSC/Johns Hopkins University, Baltimore, MD	N	0	950	1Q FY03	0	NONE	0	NONE	0	950	0
Subtotal II. Support Costs:				1501	1976		0		0		0	3477	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>BJ5</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
OTHT C - HHA and Antibody Upgrades	MIPR	Naval Medical Research Center, Silver Spring, MD	U	600	67	3Q FY03	0	NONE	0	NONE	0	667	0
OTHT C - New Assays and Antigens	MIPR	USAMRIID, Fort Detrick, MD	U	461	237	2Q FY03	0	NONE	0	NONE	0	698	0
OTE C - Transition of ITF-6B Agents (ABATS Reagent Development)	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	160	3Q FY03	0	NONE	0	NONE	0	160	0
OTHT C - JBPDS Carrier Assembly	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	17	1Q FY03	0	NONE	0	NONE	0	17	0
JBPDS													
OTE C - Initiate and Complete Army Initial Operational Test and Evaluation	MIPR	ATEC/AFOTEC, Washington, DC	U	6886	2375	1Q FY03	0	NONE	0	NONE	0	9261	0
JBSDS													
DTE S - Developmental Testing I	MIPR	Dugway Proving Ground, UT	U	0	1454	2Q FY03	0	NONE	0	NONE	0	1454	0
DTE S - Developmental Testing I	MIPR	ECBC, APG, MD	U	0	500	2Q FY03	0	NONE	0	NONE	0	500	0
OTE S - Operational Testing I	MIPR	Dugway Proving Ground, UT	U	0	2000	3Q FY03	0	NONE	0	NONE	0	2000	0
Subtotal III. Test and Evaluation:				7947	6810		0		0		0	14757	

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>BJ5</b>
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III. Test and Evaluation - Cont.  
 Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	8	2Q FY03	0	NONE	0	NONE	0	8	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	68	2Q FY03	0	NONE	0	NONE	0	68	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	28	3Q FY03	0	NONE	0	NONE	0	28	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	28	2Q FY03	0	NONE	0	NONE	0	28	0
PM/MS C - Program Management Support	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	282	2Q FY03	0	NONE	0	NONE	0	282	0
IBADS													
PM/MS S - Program Management/Program Manager Support	Various	JPO-CBD, Falls Church, VA	U	53	18	1Q FY03	0	NONE	0	NONE	0	71	0
JBPDS													
PM/MS S - Military Utility Assessment For Dry Filter Units	MIPR	JPM NBC CA, APG, MD	U	0	400	2Q FY04	0	NONE	0	NONE	0	400	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>BJ5</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
PM/MS S - BAWS Test Planning	PO	PMNBCDS, APG, MD	U	49	0	NONE	0	NONE	0	NONE	0	49	0
JBSDS													
PM/MS S - Program Management/Management Support	PO	JPM NBCCA, APG, MD	U	333	1337	1Q FY03	0	NONE	0	NONE	0	1670	0
Subtotal IV. Management Services:				435	2169		0		0		0	2604	

Remarks:

<b>TOTAL PROJECT COST:</b>	16870	16185		0		0		0		0	33055	
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## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA5 - System Development and Demonstration (SDD)**

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

**PROJECT**  
**BJ5**

**D. Schedule Profile:**

	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009											
	1	2	3	4	1	2	3	4	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																																								
International Task Force (ITF)-6A List Complete	>>			4Q																																				
DNA and Select Agent Panels for Ten Threat Agents				4Q	—————												4Q																							
DNA Efforts to ITF-6A and ITF-6B							4Q	—————												4Q																				
Upgrade Antibodies for ITF-6A											2Q	—————												1Q																
ITF-6B List Complete											2Q	—————												4Q																
ITF-6C List Complete																			1Q	—————												4Q								
IBADS																																								
Fielding Support	>>				—————												4Q																							
JBPDS																																								
Operational Assessment 2 (OA2)		1Q																																						
Low Rate Initial Production (LRIP) Phase 2 Start		1Q		4Q																																				
Block I Army Initial Operational Test and Evaluation (IOT&E) (Multiservice Operational Test and Evaluation (MOT&E) Phase I)				4Q	1Q																																			



## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA5 - System Development and Demonstration (SDD)**

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

**PROJECT**  
**BJ5**

**D. Schedule Profile (cont):**

	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBPDS (Cont)																																
Multiservice Initial Operational Test and Evaluation (IOT&E) (Phase II thru VI)									1Q	-----			2Q																			
Block I First Unit Equipped (FUE)							3Q	1Q																								
JBSDS																																
Initial JBSDS Technology Readiness Review				4Q																												
Initial JBSDS Milestone B							4Q																									
Initial JBSDS Competitive Test Fly-off							3Q	4Q																								
Initial JBSDS Developmental Testing							3Q	4Q																								
Initial JBSDS Milestone C Low Rate Initial Production (LRIP)									2Q																							
Initial JBSDS Low Rate Initial Production (LRIP)									3Q	1Q																						
Initial JBSDS Multi-Service Operational Test & Evaluation (MOT&E)													2Q	3Q																		
Initial JBSDS Production																	1Q	-----			1Q											
Initial JBSDS First Unit Equipped (FUE)																	1Q															

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**BJ5**

**D. Schedule Profile (cont):**

	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Next Generation JBSDS Concept Expl							3Q	4Q																								
Next Generation JBSDS Component Advanced Development											1Q	4Q																				
Next Generation JBSDS Advanced Development Contract											1Q																					
Next Generation JBSDS Milestone B															1Q																	
Next Generation JBSDS System Development and Demonstration (SDD)															2Q																2Q	
Next Generation JBSDS Developmental Testing (DT)																							3Q								2Q	
Next Generation JBSDS CDR																							3Q									
Next Generation JBSDS Milestone C																															3Q	
Next Generation JBSDS Low Rate Initial Production (LRIP)																															3Q	
Next Generation JBSDS Multiservice Operational Test and Evaluation (MOT&E)																																4Q

<b>Exhibit R-4a, Schedule Profile</b>							DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>BJ5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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)																																	
Low Rate Initial Production (LRIP) Contract Award For Initial JBSDS									2Q																								

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>CA5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CA5 CONTAMINATION AVOIDANCE (SDD)	69977	112432	70136	39138	23627	13438	20204	Continuing	Continuing

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

**Project CA5 CONTAMINATION AVOIDANCE (SDD):** This funding supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems.

Efforts funded in this project are: (1) Joint Biological Point Detection System (JBPDS), (2) Joint Biological Stand-off Detection System (JBSDS), (3) Joint Chemical Agent Detector (JCAD), (4) Joint Contaminated Surface Detector (JCSD), (5) Joint Effects Model (JEM), (6) Joint Operational Effect Federation (JOEF) (7) Joint Service Lightweight Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), (8) Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), (9) Joint Warning and Reporting Network (JWARN), (10) Mobile Chemical Agent Detector (MCAD), (11) Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV), (12) Force Protection - CB Installation/Force Protection Program.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
<p>The Joint Biological Point Detection System (JBPDS) program is an evolutionary advancement of the Army Biological Integrated Detection System (BIDS), Navy Interim Biological Agent Detection System (IBADS), and Air Force and Marine Corps Service specific development programs. The JBPDS suite will be integrated onto Service specific platforms (e.g., Joint Service Lightweight NBC Reconnaissance System (JSLNBCRS), Army Nuclear Biological Chemical Reconnaissance Vehicle (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 (JBPDS BLKII program) will be used to take advantage of emerging technologies and to provide the Services with enhanced bio detection performance at lower life cycle costs.</p> <p>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 FY04.</p> <p>The Joint Biological Stand-off Detection System (JBSDS) will be employed to provide remote detection of biological hazards and will provide early warning via the Joint Warning and Reporting Network (JWARN). JBSDS will augment and integrate with existing biological detection systems to provide a biological detection network capable of near real time detection and warning theaterwide, to limit the effects of biological agent hazards against U.S. forces at the tactical and operational level. It will be employed in support of various areas of interest (e.g., fixed sites, air/sea ports of debarkation, amphibious landing sites, etc.). JBSDS will be capable of operating remotely or on platforms including vehicles, aircraft, and ships.</p>		
Project CA5/Line No: 082	Page 23 of 180 Pages	Exhibit R-2a (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>

The JCAD program is developing a miniaturize, 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. JCAD will be used for aircraft, shipboard, wheeled vehicles, stand alone, and individual soldier applications. JCAD will replace the ACADA, CAM, ICAM, and other legacy systems currently used by the individual Services.

The JCSD program will develop a laser interrogation of surface agent 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.

JOEF will be a near real-time course of action analysis software tool developed in blocks. Using a detailed NBC hazard prediction, JOEF will be capable of modeling the operational impact that results from an CBRN release or attack on fixed land assets, aerial ports of debarkation (Block I), seaports of debarkation (Block II), mobile land assets and littoral areas (Block III). This program has been transitioned to IS4 and IS5 beginning FY05.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>

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 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 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. P3I will investigate new detectors/sensors and software changes to Service C4I systems. This program has been transitioned to IS5 beginning FY05.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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The MCAD will use passive infrared technology to provide real-time, on-the-move, chemical agent and other hazardous vapor detection for contamination avoidance or reconnaissance operations.

The NBCRV is a dedicated system of nuclear and chemical detection and warning equipment, 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 NBCRV will meet all of the requirements contained in the approved requirements document.

The JBPDS, IBADS, and JBSDS programs transitioned from BJ5 to CA5 in FY04.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
INTERIM BIO AGENT DETECTOR SYS (IBADS)	0	303	294
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 303 IBADS - Continue to provide engineering and technical support to maintain fielded systems.

**Total**     303



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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**FY 2005 Planned Program:**

- 294 IBADS - Continue to provide engineering and technical support to maintain fielded systems.

**Total**     294

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	5739	2948
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 791 JBPDS BLKI - Complete advanced Biological Aerosol Warning System (BAWS) upgrade for Low Rate Initial Production (LRIP) systems to meet Joint Operational Requirements Document (JORD) objective requirements for detection.
- 4948 JBPDS BLKI - Complete Multi-Service Operational Test and Evaluation (MOT&E) for the Army, Navy, and Air Force (Phases II-V). Provide final System Evaluation Report (SER).

**Total**     5739

**FY 2005 Planned Program:**

- 2148 JBPDS BLKI - Initiate planning and execution of MOT&E Phase VI for the Army, Navy, and Air Force.
- 800 JBPDS BLKI - Continue configuration management including reliability, availability, and maintainability, and Integrated Logistics Support (ILS) improvements.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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**FY 2005 Planned Program (Cont):**

**Total** 2948

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	0	15873	18592
RDT&E Articles (Quantity)	0	6	2

**FY 2004 Planned Program:**

- 2554 JBSDS - Initiate planning for Initial Operational Test and Evaluation (IOT&E).
- 7267 JBSDS - Award development contract to one of two competing candidate systems to enhance performance, develop Integrated Logistic Support (ILS) and documentation (technical manuals, specifications, etc.), and support Low Rate Initial Production (LRIP).
- 3369 JBSDS - Initiate development of next generation JBSDS system. This includes modeling and simulation analysis, market research analysis, and Cost As An Independent Variable (CAIV) analysis.
- 1737 JBSDS - Initiate background testing and analysis at multiple locations to refine detection/discrimination algorithm.
- 946 JBSDS - Initiate evaluation of CBMS II Chemical Biological Monitoring System.

**Total** 15873

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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**FY 2005 Planned Program:**

- 2570 JBSDS - Complete contract (including contractor support of Production Verification Test (PVT) and Initial Operational Test and Evaluation (IOT&E).
- 2610 JBSDS - Complete PVT.
- 4176 JBSDS - Complete IOT&E.
- 9236 JBSDS - Continue the development of Next Generation JBSDS. Award Advanced Development contract to develop the Next Generation JBSDS.

**Total** 18592

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT CHEMICAL AGENT DETECTOR (JCAD)	22116	13758	7021
RDT&E Articles (Quantity)	0	105	0

**FY 2003 Accomplishments:**

- 2850 JCAD - Continued hardware and software development based upon results from Contractor Validation Testing (CVT).
- 2220 JCAD - Continued systems engineering and logistics planning.
- 2387 JCAD - Continued technical data and logistics support.
- 1179 JCAD - Continued designing JCAD system interface with user platforms.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 13270 JCAD - Completed CVT and preplanning for government Developmental Testing (DT).</li> <li>• 210 JCAD - Continued planning for Initial Operational Test and Evaluation (OT&amp;E).</li> </ul> <p><b>Total</b> 22116</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2105 JCAD - Complete hardware and software development.</li> <li>• 4967 JCAD - Initiate government evaluation of commercial detectors.</li> <li>• 3900 JCAD - Purchase commercial off-the-shelf (COTS) systems and support (up to 105 systems at \$26K each).</li> <li>• 2786 JCAD - Continue systems engineering support.</li> </ul> <p><b>Total</b> 13758</p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4775 JCAD - Continue government evaluation of commercial detectors.</li> <li>• 2021 JCAD - Continue systems engineering support.</li> <li>• 225 JCAD - Continue contract support of COTS systems.</li> </ul> <p><b>Total</b> 7021</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT CONTAMINATED SURFACE DETECTOR (JCSD)	3179	4672	0
RDT&E Articles (Quantity)	0	1	0

**FY 2003 Accomplishments:**

- 2360 JCSD - Initiated planning for and implemented process to resolve vehicle integration issues and militarization of components. Initiated sensor performance and qualification testing and interface control document. Continued logistics planning.
- 580 JCSD - Initiated field testing.
- 239 JCSD - Initiated systems development and engineering to include design, development of systems specifications and competitive procurement packages.

**Total** 3179

**FY 2004 Planned Program:**

- 1358 JCSD - Complete systems engineering and design, and continue logistics support planning. Build first prototype unit (\$500K), and order parts for two additional units for laboratory and field testing.
- 884 JCSD - Continue sensor performance and qualification testing. Initiate modifications to vehicle platform, integrate system in vehicle, and conduct dust/smoke effects testing as well as customer demonstration.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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**FY 2004 Planned Program (Cont):**

- 478 JCSD - Initiate design of vehicle interfaces and complete the interface control document.
- 1952 JCSD - Initiate evaluation of CB Warfare Agent Detector Chip.

**Total** 4672

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT EFFECTS MODEL	0	12688	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 2021 JEM Block I - Complete development of logistics/training plans and materials. Complete Post Deployment Software Support (PDSS) plans. Support continued warfighter Integrated Process Team (IPT) involvement and conduct Milestone (MS) B.
- 5536 JEM Block I - Award contract for formal software development. Finalize service command and control system integration plans. Complete formal software development. Perform contractor level software testing. Initiate integration activities with Service Global Command and Control System (GCCS) variants and other Command and Control (C2) systems. Verify system interoperability requirements.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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**FY 2004 Planned Program (Cont):**

- 5131 JEM Block I - Develop detailed Developmental and Operational test plans. Perform Independent Validation & Verification (IV&V) activities during software development. Update the Test and Evaluation Master Plan (TEMP) and the Verification Validation and Accreditation (VV&A) plan to support MS C. Complete data gap analysis of CBRN/TIC/TIM field trials. Produce IV&V exhibits to support class accreditation. Initiate Government Developmental Testing.

**Total** 12688

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LTWT NBC RECON SYS (JSLNBCRS)	14047	13389	21221
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 550 JSLNBCRS - Completed HMMWV Developmental Test II Electromagnetic Interference (EMI), Electromagnetic compatibility (EMC), High Altitude Electromagnetic Pulse (HEMP), interoperability, and Limited User Test.
- 407 JSLNBCRS - Completed chemical software and algorithm development. Performed chemical agent tests for Chemical Biological Mass Spectrometer (CBMS) Block II transition to JSLNBCRS procurement.
- 500 JSLNBCRS - Completed program analysis and preparation for Milestone C Low Rate Initial Production (LRIP) review. Program analysis included review of test data, and future program layout.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 9990 JSLNBCRS - Continued development/design/integration of LAV variant under System Demonstration and Development (SDD) contract and to support additional work effort during the extended period of performance.</li> <li>• 2300 JSLNBCRS - Initiated and completed the design, integration, and conduct of the Mobile Chemical Agent Detector (MCAD) excursion.</li> <li>• 300 JSLNBCRS - Continued the development of the integrated training package.</li> </ul> <p><b>Total 14047</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3329 JSLNBCRS - Initiate DT I for LAV variant.</li> <li>• 6331 JSLNBCRS - Initiate TICs and TIMs software upgrade for CBMS Block II transition to JSLNBCRS procurement. Initiate improvements to biological detection/identification capability. Initiate Non-Traditional Agent (NTA) and chemical vapor algorithm, and start testing.</li> <li>• 1354 JSLNBCRS - Continue development/design of LAV enhancements, install automatic fire suppression system, LAV Generation II upgrades and test support.</li> <li>• 2375 JSLNBCRS - Initiate multiservice Operational Test and Evaluation (MOT&amp;E) planning/coordination.</li> </ul> <p><b>Total 13389</b></p>		
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**FY 2005 Planned Program:**

- 6758 JSLNBCRS - Continue TICs and TIMs software upgrades for CBMS Block II transition to JSLNBCRS procurement. Continue improvements to biological detection/identification capability. Complete NTA and chemical vapor testing.
- 9124 JSLNBCRS - Initiate multi-service Operational Test and Evaluation (MOT&E).
- 2550 JSLNBCRS - Initiate LAV Developmental Test (DT) of sensors and regression testing of Engineering Change Proposals.
- 2789 JSLNBCRS - Continue multi-service engineering support.

**Total** 21221

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LIGHTWEIGHT STANDOFF CHEMICAL AGENT DET (JSLSCAD)	13851	15559	20060
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 11005 JSLSCAD - Continued Production Qualification Test (PQT) for initial development JSLSCAD.
- 1000 JSLSCAD - Continued technical data package and acquisition documentation for Milestone (MS) III. All program documentation was reviewed and updated to support LRIP MS C.
- 1846 JSLSCAD - Continued the review and preparation of technical manuals, logistics support, and training materials. All logistics documentation was updated based on test results.

**Total** 13851

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**FY 2004 Planned Program:**

- 2714 JSLSCAD - Initiate support of the Stryker Nuclear Biological Reconnaissance Vehicle (NBCRV) Production Qualification Test and Limited User Test (LUT).
- 1000 JSLSCAD - Initiate methodology development to support the comparison of commercially available remote sensing detectors.
- 9600 JSLSCAD - Choose and purchase candidate remote sensing detectors for testing.
- 2245 JSLSCAD - Initiate and conduct testing of remote detectors to support National Research Council (NRC) findings.

**Total** 15559

**FY 2005 Planned Program:**

- 5000 JSLSCAD - Continue testing to support NRC findings.
- 8000 JSLSCAD - Initiate evaluation of candidate commercial remote detection systems.
- 3000 JSLSCAD - Integrate commercial systems into platforms.
- 4060 JSLSCAD - Support remote sensing test facility design and use for testing of commercial detectors.

**Total** 20060

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT WARNING & REPORTING NETWORK (JWARN)	8362	25550	0
RDT&E Articles (Quantity)	0	0	0

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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 5687 JWARN - Developed JWARN C4I hosted mission application software and assessed system communication requirements.</li> <li>• 2675 JWARN - Prepared and improved documentation and processes for JWARN Quality Assurance, Configuration Management, Program Management, and Integration.</li> </ul> <p><b>Total 8362</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3864 JWARN - Conduct Program Management and Oversight of JWARN and JWARN Initial Capability (JIC) Development efforts.</li> <li>• 772 JWARN - JIC Component Development.</li> <li>• 1824 JWARN - Plan for and initiate JWARN Developmental Test/Operational Assessment (DT/OA).</li> <li>• 2000 JWARN - Provide integration support for JWARN with Joint Effects Model (JEM) and Joint Operational Effect Federation (JOEF).</li> <li>• 5509 JWARN - Integrate JIC with C4I Systems.</li> <li>• 932 JWARN - Mission Application Software Integration Support</li> <li>• 1824 JWARN - Operational Assessment Planning</li> <li>• 8825 JWARN - Development of JWARN Communications Interface Device (JCID)</li> </ul> <p><b>Total 25550</b></p>		
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MOBILE CHEMICAL AGENT DETECTOR	4045	3409	0
RDT&E Articles (Quantity)	0	6	0

**FY 2003 Accomplishments:**

- 1000 MCAD - Continued agent testing at Dugway Proving Ground (DPG).
- 250 MCAD - Initiated environmental testing at White Sands Missile Range and Aberdeen Test Center.
- 2795 MCAD - Initiated outdoor simulant testing at DPG and NAVSEA with contractor support.

**Total** 4045

**FY 2004 Planned Program:**

- 3100 MCAD - Procure six commercial MCADs and support equipment for testing (\$380K each) and support equipment.
- 178 MCAD - Initiate Toxic Industrial Chemical Testing
- 131 MCAD - Continue engineering and contract support.

**Total** 3409

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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NBC RECON VEHICLE	4377	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 2835 NBCRV - Completed sensor suite engineering development, and provided sensor suite equipment to Project Manager Brigade Combat Teams (PM BCT) for the testing of four Stryker vehicles.
- 1542 NBCRV - Initiated Production Qualification Test (PQT) and initiated and completed Limited User Test (EUT).

**Total** 4377

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	1492	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 1492 SBIR - Small Business Innovative Research

**Total** 1492

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	2178	1944	0	0	0	0	4122
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	0	1104	5937	16703	30670	24308	0	0	78722
JC1500 NBC RECON VEHICLE (NBCRV)	6205	23684	18415	24295	7946	0	0	0	80545
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	5900	2085	1933	26303	29466	25317	25758	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	10022	14889	38900	0	0	0	0	0	63811
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	10569	44472	50664	72126	79680	38892	38879	Cont	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	4575	0	0	0	0	0	0	0	4575
S02201 IMPROVED CHEMICAL AGENT MONITOR (ICAM)	375	0	4100	0	0	0	0	0	4475

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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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<b>C. <u>Other Program Funding Summary (Cont):</u></b>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	2999	2733	38871	43682	43753	44226	Cont	Cont

<div style="display: flex; justify-content: space-between;"> <span>Project CA5/Line No: 082</span> <span>Page 41 of 180 Pages</span> <span>Exhibit R-2a (PE 0604384BP)</span> </div>
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**D. Acquisition Strategy:**

- |       |   |
|-------|---|
| IBADS | Technical support and maintenance of 13 fielded systems.  |
| 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 total ownership cost, will be supplied to field units throughout the LRIP phase, until new Full Rate Production (FRP) systems or LRUs are developed and made available to meet a broader range of warfighter requirements.                        |
| JBSDS | The JBSDS will use an evolutionary acquisition strategy with phased developments for the JBSDS program supporting time-phased JORD requirements. JBSDS will provide an operationally useful and supportable capability in as short a time as possible. Initial 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 will result in a selection of a single system to enter Low Rate Initial Production to support the government testing program. The next generation JBSDS follow-on development contract will be competitively awarded with emphasis on increasing sensitivity, range, and reliability, while reducing acquisition life cycle costs, weight, power requirements, and size. The system is to be used by all Services, thus reducing acquisition life cycle costs. |



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JCAD	<p>Joint Chemical Agent Detector (JCAD) acquisition strategy focused Joint Service science and technology efforts into development of a small lightweight chemical agent detector. During limited user testing (LUT) and pilot production qualification test (PQT), issues were identified in meeting two key performance parameters. Testing was terminated. The acquisition strategy is being restructured to meet the JCAD requirements. A new Acquisition Program Baseline is being developed.</p>	
JCSD	<p>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 6 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 Joint Service Lightweight Reconnaissance System (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.</p>	
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JEM	The JEM program will use a three block evolutionary acquisition approach for the design, development, testing and fielding of JEM (Blocks I, II, and III). 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 Nuclear, Biological, and Chemical (NBC) models. A cost plus award/incentive fee contract will be used for model development.
JSLNBCRS	This joint program follows a modified Non Developmental Item (NDI) strategy integrating 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 Award Decision, for 14 M1113 HMMWV variants is anticipated for 2QFY04. Initial Operational Capability (IOC), HMMWV/LAV variant, is expected during FY06.

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JSLSCAD

The present Production Qualification Test (PQT) effort has been cancelled. The program is now the Commercial JSLSCAD. The JPM NBCCA will adjust the program to reflect an incremental approach to an interim solution, and an evaluation of commercial systems against the JSLSCAD Operational Requirements Document (ORD) requirements. The following documents will be prepared to address the new direction of the program: Acquisition Strategy; Request for Proposal; Statement of Work; Acquisition Program Baseline; Test and Evaluation Master Plan, etc. Increment 1 represents an interim solution with the present JSLSCAD since it is equal to or better than the M21. Systems will go to Stryker, JSLNBCRS, and the Navy. Increment 2 will likely pursue an evaluation of three commercially available systems from three contractors who responded to the Market Survey. The commercial system evaluation will consist of technical performance tests and operational tests to support a production decision. An APB has been prepared for Increment 1. The APB for Increment 2 will be completed by Jan 04.

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JWARN	<p>The revised 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) limited, end-to-end JWARN capability to the warfighter by 4QFY04. This acceleration will be accomplished by leveraging the technology of an extant end-to-end JIC. The JIC will be completed early in the contract cycle, will be demonstrated in 2QFY04, and will be made available to key operational users by 4QFY04 in accordance with U.S. Central Command (CENTCOM) operational needs. 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.</p>	
MCAD	<p>The program procures MCADs for test and evaluation in order to make a rapid determination of MCAD capability to meet emerging National Defense and military requirements. The MCAD evaluation is being conducted as a two-year effort. There may be a follow-on program based on the results of testing conducted at Dugway Proving Ground.</p>	
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NBCRV

Development of the Nuclear Biological Chemical Reconnaissance Vehicle consists of two parts. Part I is a sensor suite developmental effort, led by JPM NBC Contamination Avoidance. Part II is an integration effort of the sensor suite into the Stryker NBCRV variant, led by the PM IBCT. The NBCRV will improve the current ability of US forces to detect and report NBC threats. The design and development of the sensor suites is under contract to CACI Technologies, Inc. Contract is a single year (with four options), cost plus fixed fee (CPFF) contract. Integration of the sensor suite and vehicle production will follow an Initial Production In-Process Review (IPR), and is under contract to General Dynamics Land System (GDLS).

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDS													
HW S - Detection and Identification Component Upgrades	C/CPFF	TBS	C	0	0	NONE	791	2Q FY04	650	2Q FY05	0	1441	0
JBSDS													
SW SB - Develop Next Generation Technologies	C/CPFF	TBS	C	0	0	NONE	350	3Q FY04	0	NONE	0	350	0
HW S - Develop and Integrate JBSDS, Initiate LRIP, Develop ILS and Documentation	C/CPFF	TBS	C	0	0	NONE	6755	2Q FY04	2370	1Q FY05	0	9125	0
HW S - Develop Next Generation JBSDS	C/CPFF	TBS	C	0	0	NONE	0	NONE	8152	1Q FY05	0	8152	0
SW S - Software Development for Initial JBSDS	C/CPFF	TBS	C	0	0	NONE	409	2Q FY04	0	NONE	0	409	0
HW S - Evaluate CBMS II Chemical Biological Monitoring System	PO	TBS		0	0	NONE	946	2Q FY04	0	NONE	0	946	0
JCAD													
HW/SW Development	C/CPAF	BAE SYSTEMS Inc, Austin, TX	C	36989	9455	Nov-02	2105	1Q FY04	0	NONE	0	48549	0
SW SB - Purchase Commercial Detectors	Reqn	TBS	C	0	0	NONE	3900	2Q FY04	0	NONE	0	3900	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JCSD</b>													
HW S - System Development and Prototypes	SS/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	1200	2126	2Q FY03	900	2Q FY04	0	NONE	0	4226	0
SW SB - Software Development	SS/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	442	784	2Q FY03	258	2Q FY04	0	NONE	0	1484	0
HW S - Vehicle Integration and Design	C/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	0	0	NONE	478	2Q FY04	0	NONE	0	478	0
HW S - Prototype Build and System Integration	C/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	0	0	NONE	490	2Q FY04	0	NONE	0	490	0
HW S - CB Warfare Agent Detector Chip	PO	TBS		0	0	NONE	1951	2Q FY04	0	NONE	0	1951	0
<b>JEM</b>													
SW SB - Hazard Prediction Model - Formal Software Development	C/CPIF	TBD	C	0	0	NONE	5135	Feb-04	0	NONE	0	5135	5850
<b>JSLNBCRS</b>													
SW S - Toxic Industrial Chemicals/Toxic Industrial Materials and Biological Detection Software Improvement for CBMS	MIPR	Oak Ridge National Laboratory, Oak Ridge, TN	U	0	2300	1Q FY03	5766	2Q FY04	5858	2Q FY05	0	13924	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HW S - Development/Design/Integration of LAV Variant	C/CPFF	Northrup Grumman Mission Systems, Sierra Vista, AZ	C	0	6477	2Q FY03	1100	1Q FY04	0	NONE	0	7577	0
<b>JSLSCAD</b>													
SW S - Develop Software	C/CPFF	General Dynamics-ATP, DeLand, FL	C	14975	0	NONE	0	NONE	0	NONE	0	14975	11095
SW SB - Design and Build Test Hardware	C/CPFF	General Dynamics-ATP, DeLand, FL	C	37500	0	NONE	0	NONE	0	NONE	0	37500	0
SW SB - Develop and Manage Test Methodology	PO	Various	U	0	0	NONE	1000	1Q FY04	8000	1Q FY05	0	9000	0
HW S - Purchase and Support Commercial Systems	PO	JPM NBCCA/RDECOM, APG, MD	U	0	0	NONE	9445	2Q FY04	4060	2Q FY05	0	13505	0
<b>JWARN</b>													
SW SB - JWARN System Development and Demonstration Contract	C/FPI	Northrop Grumman, Stafford, VA	C	0	5687	4Q FY03	9597	2Q FY04	0	NONE	0	15284	0
<b>MCAD</b>													
HW GFPR - Procure Six Commercial MCADs for testing.	SS/FFP	Northup Grumman Security Systems LLC, Linthicum, MD	C	0	0	NONE	3100	3Q FY04	0	NONE	0	3100	0



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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
NBCRV													
HW S - NBCRS Sensor Suite Engineering Development, Fabricate Prototypes, Complete Development	C/CPFF	CACI Technologies Inc, Manassas, VA	C	9264	1274	Dec-02	0	NONE	0	NONE	0	10538	16401
HW C - Redesign of Chem Vapor Sampling System (CVSS) Canister	C/CPFF	Battelle, APG, MD	C	0	400	Dec-03	0	NONE	0	NONE	0	400	0
Subtotal I. Product Development:				100370	28503		54476		29090		0	212439	

Remarks: JBSDS - JBSDS - FY04 LRIP, six at \$500K each.

JCAD - JCAD - COTS, up to 15 systems from each of seven vendors at \$26K per system (total 105 systems)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>IBADS</b>													
ILS S - Continued Support of Fielded IBAD Systems	MIPR	NSWC, Dahlgren, VA	U	0	0	NONE	288	1Q FY04	279	1Q FY05	0	567	0
<b>JBSDS</b>													
ES S - Modeling and Simulation	PO	FT Detrick, MD and BSM Inc., Kennett Square, PA	C	0	0	NONE	200	2Q FY04	200	1Q FY05	0	400	0
TD/D S - Modeling and Test Support	MIPR	NAVSEA/Johns Hopkins University, Baltimore, MD	N	0	0	NONE	600	1Q FY04	600	1Q FY05	0	1200	0
<b>JCAD</b>													
ILS S - Technical Data and Logistics Support	MIPR	Various	U	1188	1370	Nov-02	0	NONE	0	NONE	0	2558	0
ES SB - Contractor Support of Technical Evaluation	Reqn	TBS		0	0	NONE	0	NONE	225	1Q FY05	0	225	0
<b>JCSD</b>													
ILS S - Initiate Logistics Planning	MIPR	JPM NBC CA, APG, MD	U	50	50	1Q FY03	100	2Q FY04	0	NONE	0	200	0
<b>JEM</b>													
ES S - IPT - System Engineering, Logistics, and Program Support	MIPR	Various	U	0	0	NONE	2111	Jan-04	0	NONE	0	2111	2171
<b>JSLNBCRS</b>													
ES C - CSS Support	C/FFP	SVERDRUP, Dumfries, VA	C	1400	469	1Q FY03	600	1Q FY04	0	NONE	0	2469	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JBPDS</b>													
OTE C - Plan and Conduct Multi-Service OT&E	MIPR	Various	U	0	0	NONE	4448	1Q FY04	1348	1Q FY05	8000	13796	0
<b>JBSDS</b>													
OTE S - Planning and Operational Testing I	MIPR	AFOTEC, Albuquerque, NM	U	0	0	NONE	818	2Q FY04	620	2Q FY05	0	1438	0
OTE C - Production Verification Test	MIPR	Developmental Test Command, APG, MD	U	0	0	NONE	100	2Q FY04	800	4Q FY05	0	900	0
OTE S - Operational Testing I	MIPR	Operational Test Command, FT Hood, TX		0	0	NONE	700	2Q FY04	2500	1Q FY05	0	3200	0
OTHT S - OT/DT Initial JBSDS	MIPR	AEC, APG, MD		0	0	NONE	450	2Q FY04	450	2Q FY05	0	900	0
<b>JCAD</b>													
DTE S - JCAD Developmental Test (DT)	MIPR	Various Govt	U	10327	10064	Oct-02	0	NONE	0	NONE	0	20391	0
OTE S - JCAD Initial Operational Test and Evaluation (IOT&E) Supporting LRIP	MIPR	Various Govt	U	0	210	Oct-02	0	NONE	0	NONE	0	210	0
OTHT C - Methodology Development for Hand Held Detectors	MIPR	JPM, NBC, CA, APG, MD		0	0	NONE	2000	2Q FY04	0	NONE	0	2000	0
OTHT C - Evaluate Commercial Detectors	MIPR	Various	U	0	0	NONE	3000	2Q FY04	5775	1Q FY05	0	8775	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JCSD</b>													
DTE C - Engineering Design Test	MIPR	Dugway Proving Ground, DPG, UT	U	0	77	Feb-03	9	Mar-04	0	NONE	0	86	0
OTHT S - Hardware Engineering Test	C/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	0	0	NONE	386	2Q FY04	0	NONE	0	386	0
<b>JEM</b>													
DTE S - Hazard Prediction Model - Developmental Test	MIPR	Various	U	0	0	NONE	2442	Feb-04	0	NONE	0	2442	2510
OTE S - Hazard Prediction Model - Operational Test	MIPR	Various	U	0	0	NONE	2310	May-04	0	NONE	0	2310	2375
OTHT S - Hazard Prediction Model - Independent Verification and Validation	C/FFP	TBS	C	0	0	NONE	233	Jan-03	0	NONE	0	233	240
<b>JSLNBCRS</b>													
OTHT SB - Conduct Limited User Test of HMMWV	MIPR	Various	U	2400	800	1Q FY03	0	NONE	0	NONE	0	3200	0
OTHT SB - HMMWV Variant Developmental Test II	MIPR	Various	U	0	220	1Q FY03	0	NONE	0	NONE	0	220	0
OTHT SB - Developmental Testing for CBMS	MIPR	Dugway Proving Ground, Dugway, UT	U	0	0	NONE	433	2Q FY04	600	2Q FY05	0	1033	0
DTE S - LAV DT I	MIPR	Dugway Proving Ground, Dugway, UT	U	0	0	NONE	2500	1Q FY04	2500	1Q FY05	0	5000	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT S - MCAD Versus JSLSCAD Comparison Test	MIPR	Dugway Proving Ground, Dugway, UT	U	0	2100	2Q FY03	0	NONE	0	NONE	0	2100	0
OTHT S - MOTE Test Site Support	PO	Various	U	0	0	NONE	1375	2Q FY04	9174	1Q FY05	0	10549	0
<b>JSLSCAD</b>													
OTHT C - Support Stryker NBCRV PQT, LUT and Integration Test	MIPR	Various	U	8876	5060	Nov-02	2362	Nov-03	0	NONE	0	16298	9767
OTHT S - Engineering Design Test, Production Qualification Test, and Initial Operational Test and Evaluation	MIPR	Various	C	4100	5940	Nov-02	0	NONE	0	NONE	0	10040	3464
OTHT SB - Remote Vapor Sensing to Support NRC Findings	PO	Various	U	0	0	NONE	2400	2Q FY04	2000	1Q FY05	0	4400	0
OTHT S - Evaluate Commercial Remote Sensing Systems	PO	Various		0	0	NONE	0	NONE	6000	2Q FY05	0	6000	0
<b>JWARN</b>													
OTHT SB - Developmental Test II /Operational Assessment Full Requirements	MIPR	Various	U	0	0	NONE	1824	2Q FY04	0	NONE	0	1824	0
<b>MCAD</b>													
DTE C - Agent Response Testing	MIPR	Various Government test sites	U	0	3450	2Q FY03	0	NONE	0	NONE	0	3450	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE C - Contractor Support Developmental Testing	C/CPFF	Northrup Grumman, Linthicum, MD	C	0	495	2Q FY03	0	NONE	0	NONE	0	495	0
OTHT S - Toxic Industrial Chemical (TIC) Testing	MIPR	Nevada Test site, Mercury, NV	U	0	0	NONE	178	3Q FY04	0	NONE	0	178	0
OTHT S - Contractor Support TIC Testing	SS/FFP	Northrup Grumman Security Systems LLC, Linthicum, MD	C	0	0	NONE	60	3Q FY04	0	NONE	0	60	0
<b>NBCRV</b>													
OTHT SB - Support Production Qualification Test/Early User Test	MIPR	JPM NBC CA, APG, MD	U	2160	492	Dec-02	0	NONE	0	NONE	0	2652	3244
OTE SB - Support Production Qualification Test/Early User Test	C/CPFF	Battelle, APG, MD	C	0	240	Nov-03	0	NONE	0	NONE	0	240	0
<b>Subtotal III. Test and Evaluation:</b>				<b>27863</b>	<b>29148</b>		<b>28028</b>		<b>31767</b>		<b>8000</b>	<b>124806</b>	

Remarks: JBSDS - JBSDS - Developmental and Operational Testing

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2004		
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	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IBADS													
PM/MS S - Program Management/Program Manager Support	PO	JPEO-CBD, Falls Church, VA	U	0	0	NONE	15	1Q FY04	15	1Q FY05	0	30	0
JBPDS													
PM/MS S - Project Management	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	500	1Q FY04	950	1Q FY05	0	1450	0
JBSDS													
PM/MS S - Program Management/Management Support	MIPR	JPM NBC CA, APG, MD	U	0	0	NONE	2081	1Q FY04	1600	1Q FY05	0	3681	0
PM/MS S - Other Services (Army, Navy, and Air Force)	MIPR	Various	U	0	0	NONE	984	1Q FY04	1300	1Q FY05	0	2284	0
PM/MS S - Modeling and simulation analysis, market research and CAIV	MIPR	Various	U	0	0	NONE	1480	2Q FY04	0	NONE	0	1480	0
JCAD													
PM/MS SB - Joint Service Support	MIPR	Various	U	4706	1017	1Q FY03	2753	1Q FY04	1021	1Q FY05	0	9497	0
JCSD													
PM/MS S - Project Management	MIPR	JPM NBC CA, APG, MD	U	79	142	1Q FY03	100	1Q FY04	0	NONE	0	321	0
JEM													
PM/MS S - Program Office - Planning and Programming	MIPR	SPAWARSYSCOM, San Diego, CA	U	0	0	NONE	457	Jan-04	0	NONE	0	457	895



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSLNBCRS</b>													
PM/MS SB - Joint Service Integrated Product Team Support	MIPR	Various	U	1475	331	1Q FY03	300	1Q FY04	2726	1Q FY05	0	4832	0
PM/MS SB - Project/Program Management	PO	JPM NBC CA, APG, MD	U	0	1050	1Q FY03	915	1Q FY04	363	1Q FY05	0	2328	0
<b>JLSLSCAD</b>													
PM/MS S - JLSLSCAD - Core Team Salaries and Other Government Agencies Support Through Milestone III IPR.	MIPR	JPM NBC CA, APG, MD and Other Service Support	U	3670	986	Nov-02	352	Jan-04	0	NONE	0	5008	2580
<b>JWARN</b>													
PM/MS SB - Joint Integrated Product Team Support	MIPR	Various	U	0	2675	1Q FY03	5688	1Q FY04	0	NONE	0	8363	0
<b>MCAD</b>													
PM/MS S - Planned Project Support	MIPR	JPM NBC CA, APG, MD	U	0	100	2Q FY03	71	2Q FY04	0	NONE	0	171	0
<b>NBCRV</b>													
PM/MS SB - Engineering Management	MIPR	JPM NBC CA, APG, MD	U	4340	1711	Dec-02	0	NONE	0	NONE	0	6051	4197
PM/MS SB - Engineering Management	MIPR	JPM NBC CA, APG, MD	U	0	260	Dec-03	0	NONE	0	NONE	0	260	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	1492	NONE	0	NONE	0	1492	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>					PROJECT <b>CA5</b>		
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:				14270	8272		17188		7975		0	47705	

Remarks:

TOTAL PROJECT COST:				149466	69977		112432		70136		8000	410011	
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Project CA5

## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA5 - System Development and Demonstration (SDD)**

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

**PROJECT**  
**CA5**

<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009					
	1	2	3	4	1	2	3	4	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																																		
Operational Assessment 2 (OA2)	1Q																																	
Low Rate Initial Production (LRIP) Phase 2 Start	1Q	—		4Q																														
Block I Army Initial Operational Test and Evaluation (IOT&E) (Multiservice Operational Test and Evaluation (MOT&E) Phase I)				4Q	1Q																													
Multiservice Initial Operational Test and Evaluation (IOT&E) (Phase II thru VI)									1Q	—————			2Q																					
Block I First Unit Equipped (FUE)							3Q	—	1Q																									
JBSDS																																		
Initial JBSDS Technology Readiness Review				4Q																														
Initial JBSDS Milestone B								4Q																										
Initial JBSDS Competitive Test Fly-off							3Q	4Q																										
Initial JBSDS Developmental Testing							3Q	4Q																										

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**CA5**

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Initial JBSDS Milestone C Low Rate Initial Production (LRIP)									2Q																							
Initial JBSDS Low Rate Initial Production (LRIP)									3Q	1Q																						
Initial JBSDS Multi-Service Operational Test & Evaluation (MOT&E)											2Q	3Q																				
Initial JBSDS Production													1Q	1Q																		
Initial JBSDS First Unit Equipped (FUE)													1Q																			
Next Generation JBSDS Concept Expl							3Q	4Q																								
Next Generation JBSDS Component Advanced Development											1Q	4Q																				
Next Generation JBSDS Advanced Development Contract											1Q																					
Next Generation JBSDS Milestone B													1Q																			
Next Generation JBSDS System Development and Demonstration (SDD)															2Q	2Q																
Next Generation JBSDS Developmental Testing (DT)																			3Q	2Q												

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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Next Generation JBSDS CDR																																
Next Generation JBSDS Milestone C																																
Next Generation JBSDS Low Rate Initial Production (LRIP)																																
Next Generation JBSDS Multiservice Operational Test and Evaluation (MOT&E)																																
Low Rate Initial Production (LRIP) Contract Award For Initial JBSDS																																
JCAD																																
Systems Development & Demonstration (SDD) Contract																																
Contractor Validation Test																																
Market Survey of Commercially Available Items																																
Request For Proposal (RFP) to Selected Commercially Available Systems																																
Technical Evaluation and Analysis of Data																																

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## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**

PROJECT  
**CA5**

D. <u>Schedule Profile (cont):</u>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Milestone C - Low Rate Initial Production (LRIP) Decision																4Q																
JCSD																																
Fabricate Eng Prototypes (Gen I)				>> 4Q																												
Research and Development Contract Award (Generation II)				4Q																												
Lab/Field Testing (Generation I)				4Q				2Q																								
Technology Development								2Q				2Q																				
CONOPS Development												2Q								1Q												
Vehicle Integration												3Q				4Q																
Operational Test																				4Q												
Milestone C																				1Q												
JEM																																
BLK I - Software Development								3Q				4Q																				
BLK I - Milestone B Decision												2Q																				
BLK I - Award System Development and Demonstration (SDD) Contract												2Q																				

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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 - In Process Review (IPR)									2Q																							
BLK I - Developmental Testing (DT) (Contractor)									4Q																							
BLK I DT (Government)									4Q	—	3Q																					
BLK I Software Maintenance									4Q	—	1Q																					
BLK I - Establish, Train, Stand Up Software Support Activity									1Q	—	3Q																					
BLK I - Operational Testing (OT)											4Q	—	2Q																			
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)													3Q																			
BLK I - Post Deployment Software Support													3Q	—	2Q																	
JSLNBCRS																																
Development Testing II (HMMWV)			3Q	—	1Q																											
Chemical Test CBMS II			3Q	—	1Q																											

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CA5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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)																																	
Milestone C Low Rate Initial Production (LRIP)									2Q																								
Engineering Developmental Test (EDT) (LAV)									2Q 3Q																								
Development and Testing									1Q	—————			4Q																				
Developmental Test I (DT I) LAV variant									3Q	—————			3Q																				
Developmental Testing CBMS II									3Q	—————			3Q																				
First Article Test													1Q																				
Multi-service Operational Test and Evaluation (MOT&E) for HMMWV and the LAV																4Q	1Q																
Milestone C Full Rate Production (FRP)																	2Q																
JSLSCAD																																	
Increment 2 - Government Test of Commercial Items									1Q	—————			4Q																				
Complete Test and Operational Documentation for Stryker NBCRV Test									2Q																								



**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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							3Q					4Q																				
Joint Service Milestone C Low Rate Initial Production (LRIP)																				3Q												
Increment - 1 Pre Qualification Test (PQT)/Initial Operations Test and Evaluation (IOT&E) for Initial Developmental Items							3Q					1Q																				
Increment - 2 Evaluation of Commercial Systems												1Q																				4Q
Increment 2 - Initial Operational Test and Evaluation (IOT&E) of Commercial Systems																																4Q
Increment 2 - Full Rate Production Milestone C																																3Q
JWARN																																
System Design and Development (SDD) Contract Award												4Q																				2Q



## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA5 - System Development and Demonstration (SDD)**

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**      **PROJECT**  
**CA5**

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
MCAD (Cont)																																	
Procure Six Commercial MCADs											3Q	—	2Q																				
MMS																																	
Program Preparation and Data Analysis (SDT)				4Q	—	2Q																											
CONOPS Development					1Q	—	—	2Q																									
Test Location Surveys				4Q	—	—	4Q																										
Statistical Radar Test Planning					1Q	—	—	2Q																									
Statistical Radar Test Execution						2Q	—	—	3Q																								
Data Analysis						2Q	—	—	3Q																								
Down Select Support							3Q	4Q																									
Algorithm/Software Development							3Q	—	2Q																								
Training and Logistics Development							3Q	—	2Q																								
Information Technology							2Q	—	2Q																								
Deliverable Systems									2Q	—	4Q																						
NBCRV																																	
Fabricate Engineering Prototypes	>>	—	—	—	—	—	—	2Q																									
Production Qualification Test (PQT)									3Q	—	2Q																						

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CA5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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 In Process Review (IPR) - Milestone C									2Q																								

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CM5 HOMELAND DEFENSE (SDD)	956	5974	24274	389	0	0	0	0	31593

**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 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 at 200 DoD installations (185 CONUS and 15 OCONUS).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CB INSTALLATION/FORCE PROTECTION PROGRAM	0	5000	10030
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>

**FY 2004 Planned Program:**

- 500 Force Protection - Initiate test and evaluation of emerging governmental and commercial CBRN detection, identification warning, individual and collective protection, decontamination, medical surveillance and protection technologies.
- 1850 Force Protection - Initiate independent installation evaluation assessments.
- 1250 Force Protection - Initiate software development of a CBRN knowledge base to support decision tools needed to determine installation critical CBRN requirements.
- 776 Force Protection - Initiate an improved and lower cost biological aerosol warning system to support Dry Filter Units. System will provide improved warning of a potential biological release, supporting more rapid analysis.
- 500 Force Protection - Initiate development and improvement of NBC warning system to support unique installation warning and reporting requirements.
- 124 Force Protection - Engineering and technical support.

**Total** 5000

**FY 2005 Planned Program:**

- 1300 Force Protection - Complete test and evaluation of emerging governmental and commercial CBRN detection, identification warning, individual and collective protection, decontamination, medical surveillance and protection technologies.
- 500 Force Protection - Complete independent installation evaluation assessments.
- 2130 Force Protection - Complete software development of a CBRN knowledge base to support decision tools needed to determine installation critical CBRN requirements.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>
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**FY 2005 Planned Program (Cont):**

- 1500 Force Protection - Develop an improved, lower cost biological aerosol warning system to support Dry Filter Units. This system will provide improved warning of a potential biological release, supporting more rapid analysis.
- 1400 Force Protection - Develop an improved NBC warning system to support unique, installation warning and reporting requirements.
- 2000 Force Protection - Develop improved biological identification technologies (electro-chemiluminescence) to support laboratory operations. Improvements will support the development of a multiplex immunoassay capability thereby reducing processing time and costs.
- 1000 Force Protection - Initiate and complete development of improved TIC detection and identification. Focus on improved automation to reduce costs.
- 200 Force Protection - Engineering and technical support.

**Total 10030**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	956	958	14244
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 840 WMD CST- Initiated developmental upgrade of Analytical Laboratory Systems (ALS).</li> <li>• 116 WMD CST - Provided government engineering and planning support.</li> </ul> <p><b>Total</b> 956</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 848 WMD CST- Continue development of Unified Command Suite (UCS) and Analytical Laboratory System (ALS) upgrades.</li> <li>• 110 WMD CST - Provide government engineering and planning support.</li> </ul> <p><b>Total</b> 958</p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1800 WMD CST- Initiate Developmental Test for UCS and ALS.</li> <li>• 7424 WMD CST- Initiate Initial Operational Test and Evaluation (IOT&amp;E) of the UCS/ALS.</li> <li>• 4900 WMD CST- Continue development of UCS and ALS upgrades.</li> <li>• 120 WMD CST - Provide government engineering and planning support.</li> </ul> <p><b>Total</b> 14244</p>		
Project CM5/Line No: 082	Page 74 of 180 Pages	Exhibit R-2a (PE 0604384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	16	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 16 SBIR - Small Business Innovative Research

**Total**      16

**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1520	1558	1568	1555	1552	0	0	0	7753
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	14055	8793	0	0	0	0	0	0	22848

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>

**D. Acquisition Strategy:**

**FORCE PROT**

Installation Protection Program will compete alternative RDT&E efforts to exploit innovation in the commercial world and take advantage of emerging techniques for CBRN protection, particularly in the areas of biological and aerosol warning systems. Focus of the efforts is to provide more rapid detection and meet unique installation requirements.

Installation Protection Program will augment the efforts of the Production LSI contractor with a competitively awarded contract for independent assessments and evaluations of installation requirements. This effort will provide the feedback necessary to plan future improvements.

Installation Protection Program will competitively award a contract to establish a knowledge base which will contain all the data from site surveys, testing exercises and will also be the baseline on which new techniques and technologies can build additional capabilities.

Installation Protection Program will competitively award a contract to develop software tools to assist in timely detection and analysis of CBRN threats.

Installation Protection Program will competitively award a contract to develop a biological identification process and automate TIC detection/identification capabilities.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>

WMD CST

This program utilizes multiple acquisition vehicles: 1) This program funds the acquisition of Chemical and Biological Defense equipment as outlined in the Defense Reform Directive #25 (DRID #25); 2) Design and develop new Mobility Platform for the Analytical Laboratory System-System Enhancement Program (ALS-SEP) that displaces interim Dismounted Analytical Platform (DAP) and legacy Mobile Analytical Laboratory Systems (MALS); 3) Conduct Initial Operational Test and Evaluation (IOT&E) of ALS SEP in FY04; 4) Initiate Block I upgrades program in FY03/FY04 of Unified Command Suite (UCS) and ALS systems to incorporate technology insertion via To Be Selected (TBS) contracts; 5) In FY05 conduct Developmental Test (DT) and IOT&E of prototype systems and produce system improvement/enhancement upgrades; 6) Continue evaluation of existing and new commercial off-the-shelf (COTS) equipment to incorporate into Table of Distribution and Allowances (TDA) to meet increasing requests; and 7) Continue US Army Reserve (USAR) type-classified CB equipment refurbishment.

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CM5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>FORCE PROT</b>													
Develop CBRN Knowledge Base	C/CPAF	TBS	C	0	0	NONE	1250	Jun-04	2130	Nov-05	0	3380	0
Develop Biological Aerosol Warning System	C/CPAF	TBS	C	0	0	NONE	776	Jul-04	1500	Nov-05	0	2276	0
Develop NBC Warning System	C/CPAF	TBS	C	0	0	NONE	500	May-04	1400	Nov-05	0	1900	0
Develop Biological Identification Process	C/CPAF	TBS	C	0	0	NONE	0	NONE	2000	Nov-05	0	2000	0
Automate TIC Detection/Identification	C/CPAF	TBS	C	0	0	NONE	0	NONE	1000	Nov-05	0	1000	0
<b>WMD CST</b>													
SW SB - Development Upgrades Unified Command Suite and Analytical Lab Sys	MIPR	RDECOM, Aberdeen Proving Ground, MD	U	0	440	2Q FY03	324	2Q FY04	2900	2Q FY05	0	3664	0
HW S - Development Upgrades Unified Command Suite	MIPR	NAWCAD, St. Inigoes, MD	U	0	0	NONE	224	3Q FY04	2000	2Q FY05	0	2224	0
HW S - Development Upgrades Analytical Lab System	C/CPFF	Battelle, Columbus, OH	C	0	400	4Q FY03	300	3Q FY04	0	NONE	0	700	0
<b>Subtotal I. Product Development:</b>				<b>0</b>	<b>840</b>		<b>3374</b>		<b>12930</b>		<b>0</b>	<b>17144</b>	

Remarks:

**UNCLASSIFIED**

UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>						PROJECT <b>CM5</b>	
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II. Support Costs: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
FORCE PROT													
Test Emerging CBRN Technologies	C/CPAF	TBS	C	0	0	NONE	500	May-04	1300	Nov-05	0	1800	0
Installation Evaluation Assessments	C/CPAF	TBS	C	0	0	NONE	1850	May-04	500	1 Nov 2005	0	2350	0
WMD CST													
DTE S - Developmental Test II Unified Command Suite and Analytical Lab Sys	MIPR	RDECOM, APG, MD	U	0	0	NONE	0	NONE	1800	2Q FY05	0	1800	0
OTHT SB - Initial Operational Test and Evaluation Unified Command Suite and Analytical Lab System	MIPR	RDECOM, APG, MD	U	0	0	NONE	0	NONE	7424	2Q FY05	0	7424	0
Subtotal III. Test and Evaluation:				0	0		2350		11024		0	13374	

Remarks:

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CM5</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>FORCE PROT</b>													
Management Support and Planning	Allot	JPM Installation Protection, Falls Church, VA	U	0	0	NONE	124	Oct-04	200	Oct-04	0	324	0
<b>WMD CST</b>													
PM/MS S - Management Services	MIPR	PM WMD CSS, APG, MD	U	0	116	1Q FY03	110	2Q FY04	120	1Q FY05	0	346	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	MIPR	HQ AMC, Alexandria, VA	U	0	0	NONE	16	1Q FY04	0	NONE	0	16	0
Subtotal IV. Management Services:				0	116		250		320		0	686	

Remarks:

TOTAL PROJECT COST:	0	956		5974		24274		0	31204
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Project CM5

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FORCE PROT																																
Program Initiation In Process Review (IPR)									1Q																							
Evaluate Potential Technologies for Installation Protection Suite									1Q	—————			4Q																			
Develop and Integrate Improved Information Management Software										1Q	—————			4Q																		
Develop and Revise CONOPS										1Q	—————			4Q																		
Conduct Studies and Analysis for Potential Critical CBRN Equipment and Processes										1Q	—————			4Q																		
Conduct Installation Site Preparation									1Q	—————											2Q											
Site Installation										3Q	—————											4Q										
Operational Assessment (OA)										4Q	1Q																					
WMD CST																																
ALS SEP Prototype Fabrication																																
Analytical Laboratory System (ALS) Upgrade Market Survey																																
Analytical Laboratory System (ALS) Upgrade Technology Screening													4Q	—————			4Q															

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Analytical Laboratory System (ALS) In Progress Review (IPR)									1Q																							
Analytical Laboratory System (ALS) Component Testing/Integrated Component Testing									3Q	-----	3Q																					
Analytical Laboratory System (ALS) In Progress Review (IPR)													2Q																			
ALS Prototyping Vehicle Installation Options													2Q	3Q																		
ALS Developmental Testing (DT)													3Q	4Q																		
Analytical Lab System (ALS) In Process Review (IPR)																	4Q															
ALS Limited User Testing (LUT)													4Q	1Q																		
ALS Pre-Production Evaluation													4Q	1Q																		
ALS Initial Operational Testing (IOT)													4Q	1Q																		
UCS Design Engineering and Documentation									2Q																							



<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CM5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
UCS Prototyping-Vehicle Installation Options											3Q				2Q																	
Unified Command Suite (UCS) Developmental Testing (DT)															2Q	3Q																
UCS Initial Operational Test (IOT)															3Q	4Q																
UCS In Process Review (IPR)																			1Q													

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>CO5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CO5 COLLECTIVE PROTECTION (SDD)	4106	2923	2590	4118	4576	2668	2724	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 Nuclear, Biological and Chemical (NBC) collective protection systems that are smaller, lighter, less costly to build and maintain, and more logistically supportable to enable mission accomplishment in NBC environments. Collective protection platforms include shelters, vehicles, ships, aircraft, buildings, and hospitals.

Systems funded under this project are: (1) Chemical Biological Protective Shelter (CBPS) P3I; (2) Joint Collective Protection Equipment (JCPE); and (3) Shipboard Collective Protection Equipment (SCPE).

The CBPS-P3I improved the operational suitability and reliability of the CBPS currently in production for Army light divisions. The P3I initiated development of a Self-Powered Environmental Support System (SP-ESS) with reduced fuel consumption, noise, weight, maintenance, and provided space for additional medical equipment. The SP-ESS does not require power take-off from the transport vehicle's engine.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>
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The JCPE program provides needed improvements and cost saving standardization to currently fielded systems. Standardization of individual system components (specifically filter systems) across Joint Service mission areas will reduce logistics burden while maintaining the industrial base. In addition, the program focuses on fixing specific problems and deficiencies with currently fielded collective protection system equipment designated high priority by each Service. JCPE provides improvements to current fixed site, building, shipboard, and vehicle collective protection systems. JCPE's efforts on portable shelters provides improvements in the form of CBR-D capability sets for existing shelters. JCPE will specifically insert off-the-shelf technologies into these older systems to: (1) solve reliability, maintainability, and operational problems, (2) significantly reduce manufacturing and/or operating costs, (3) solve previously unmet requirements, and (4) provide improved interim capabilities.

The SCPE program developed a high efficiency, quiet collective protection system fan rotor, and extended service life of shipboard High Efficiency Particulate Air (HEPA) filters from three years to four years. The program developed and tested other collective protection system components that decreased total ownership costs (TOC), reduced shipboard maintenance requirements, and provided energy-efficient equipment.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CB PROTECTIVE SHELTER/P3I	1365	0	0
RDT&E Articles (Quantity)	2	0	0

**FY 2003 Accomplishments:**

- 786 CBPS P3I - Awarded contract to fabricate two SP-ESS prototypes at a unit cost of \$393K.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>
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**FY 2003 Accomplishments (Cont):**

- 88 CBPS P3I - Conducted preliminary testing on two SP-ESS prototypes.
- 80 CBPS P3I - Finalized design concept for SP-ESS.
- 411 CBPS P3I - Purchased materials and integrated systems.

**Total** 1365

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT COLLECTIVE PROTECTION EQUIPMENT	2086	2874	2590
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>

**FY 2003 Accomplishments:**

- 763 JCPE - Completed development and testing of 2000 cubic feet per minute (CFM) particulate filters to reduce logistics costs. Completed live agent testing of improved 200 CFM gas filter. Completed development and testing of one improved recirculation filter unit to reduce logistics costs. Completed development and testing of sound barriers for noise reduction and abatement within Chemical and Biological (CB) shelter systems. Completed testing of 30 in-service 100/200 CFM gas filters to determine service life. Completed design and testing of the thermal efficiency of CB protected shelter systems. Completed development and testing of Fan Filter Assembly (FFA) 400-100 and M93 Modular Collective Protection Equipment (MCPE) candidate motor/blowers for CB shelter systems to improve efficiency, reliability, size, and weight. Completed study to determine the contamination control area requirements that meet NATO standards. Completed development of logistical support plan for prior JCPE items. Completed the system engineering of capability sets with improved components. Completed development and testing of an automatic power transfer switch for Collectively Protected Expeditionary Medical Support (CPMEMDS). Completed design and testing of a Collective Protection (CP) modification kit for fielded heater systems. Completed design and testing to reduce the CB filter blower heat load. Completed study to investigate environmental control unit (ECU) and power applications to CP shelters. Completed performance testing of CB liners for long term storage in temperature extremes and alternate seam configurations. Completed development and testing of a CB liner seam tester. Completed development and testing of an improved repair process for CB liners.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>

**FY 2003 Accomplishments (Cont):**

- 1180 JCPE - Continued program management and IPT support. Continued integration and testing of a Tunnel Airlock Litter Patient (TALP) with a Modular General Purpose Tent System (MGPTS). Continued development of a suite of improved airlocks to reduce purge times and provide simultaneous entry/exits for all existing CB shelter systems. Continued development and testing of a modified M28 liner for large capacity shelters. Continued design and testing of improvements to liner material, construction, and enclosures. Continued development and testing of a CP latrine for CPEMEDS. Continued development and testing of a CP latrine for CPEMEDS.
- 143 JCPE - Initiated 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.

**Total** 2086

**FY 2004 Planned Program:**

- 562 JCPE - Complete development and testing of a CP latrine for CPEMEDS. Complete development and testing of a modified M28 liner for large capacity shelters. 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 live agent testing of improved 100/200 CFM gas filters. Complete testing of developmental prototypes of a suite of improved airlocks to reduce purge times and provide simultaneous entry/exits for all existing CB shelter systems. Complete integration and testing of a Tunnel Airlock Litter Patient (TALP) with a Modular General Purpose Tent System (MGPTS).
- 1076 JCPE - Continue program management and IPT support. Continue design and testing of improvements to liner material, construction, and enclosures.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>

**FY 2004 Planned Program (Cont):**

- 1236 JCPE - Initiate testing to determine effectiveness of CB shelters while subjected to extreme environmental conditions. Complete development and testing of an individual distribution breathing air hose. Complete development and testing of a filter moisture indicator. Initiate development and testing of a small shelter system (SSS) contamination control area (CCA) and airlock integration. Complete development of shipboard CP automation. Initiate development and testing of a collective protection blast operational analysis.

**Total** 2874

**FY 2005 Planned Program:**

- 1226 JCPE - Complete design and testing of improvements to liner material, construction, and enclosures. Complete testing of CB shelters subjected to extreme environmental conditions. Complete development and testing of a SSS CCA/airlock integration. Complete development and testing of a collective protection blast operational analysis. Complete development and testing of 100/200 CFM gas filters to provide protection against selected toxic industrial chemicals (TICs).
- 764 JCPE - Continue program management and IPT support.
- 600 JCPE - Initiate and complete 28 Volt Direct Current modified M93 gas particulate filter unit. Initiate filter capacity service life study for land-based facilities by testing samples of used filters to determine a more accurate filter change out schedule.

**Total** 2590

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SHIPBOARD COLL PROTECTION EQUIP	655	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 655 SCPE - Completed shipboard testing of improved CPS fan rotors. Test data will be used to revise CPS fan rotor performance specification. Completed final year of verification testing to validate the four year performance of improved prefilters and HEPA filters. Completed testing and evaluation of HEPA filter performance degradation after TICs/Toxic Industrial Materials (TIMs) exposure. Completed development and testing of two electronic differential pressure gauges for remote reading to improve shipboard CPS maintenance.

**Total**      655

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	49	0
RDT&E Articles (Quantity)	0	0	0



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>
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**FY 2004 Planned Program:**

- 49 SBIR - Small Business Innovative Research

**Total 49**

<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
JCP001 COLLECTIVELY PROTECTED DEPLOYABLE MEDICAL SYSTEM	1073	0	0	0	0	0	0	0	1073
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	16989	14623	16211	11080	7378	0	0	0	66281
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	6548	19414	2183	2043	1798	2917	0	0	34903

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>

**D. Acquisition Strategy:**

CBPS	The CBPS P3I program was initiated to integrate a Self-Powered Environmental Support System (SP-ESS) that will replace the hydraulic components and eliminate the need to use power from the High Mobility Multi-Purpose Wheeled Vehicle's (HMMWV) engine. An Integrated Product Team is investigating the best method for incorporating this change. The next CBPS procurement contract option, currently planned for award in 2Q FY04, will include the SP-ESS. The new SP-ESS design will be incorporated into the CBPS production line by a Engineering Change Proposal (ECP) modification to the existing CBPS production contract.
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.
SCPE	In-house/contract design and fabrication of prototype components with in-house/contract testing. Initial fans, motors, and filters will be procured as part of new ship construction using Ship Conversion Navy (SCN) funds. Replacements will be provided with Operation & Maintenance, Navy (O&M,N) funds. Design and component enhancements developed by SCPE are also applied to the CPS Backfit Program.

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBPS													
HW SB - Contractor Hardware Development	C/CPFF	Radian, Inc., Alexandria, VA	C	300	0	NONE	0	NONE	0	NONE	0	300	0
HW SB - Hardware Development	MIPR	Red River Army Depot, Texarkana, TX ; CECOM, Ft Monmouth, NJ	U	259	228	1Q FY03	0	NONE	0	NONE	0	487	0
HW SB - Contractor Hardware Development	C/CPFF	Solectria Corp., Woburn, MA	C	0	786	2Q FY03	0	NONE	0	NONE	0	786	0
JCPE													
HW C - Modified 100/200 CFM Filter for TICs - Development and Engineering	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	408	1Q FY05	0	408	400
HW C - 2000 CFM Particulate Filter - Improvements	WR	NSWCDD, Dahlgren, VA	U	226	59	1Q FY03	0	NONE	0	NONE	0	285	285
HW C - Improved Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	400	32	1Q FY03	0	NONE	0	NONE	0	432	450
HW C - Development of Modified M28 Liner System for Large Capacity Shelter	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	400	100	1Q FY03	0	NONE	0	NONE	0	500	490
HW C - Shipboard CPS Supply Fans - Development	WR	NSWCDD, Dahlgren, VA	U	0	43	1Q FY03	50	1Q FY04	0	NONE	0	93	153

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HW C - Improved Liner - Materials/Construction/Closures	MIPR	RDECOM, Natick, MA	U	600	115	1Q FY03	0	NONE	0	NONE	0	715	951
HW C - Shipboard CP Automation	WR	NSWCDD Dahlgren, VA	U	0	0	NONE	25	1Q FY04	0	NONE	0	25	25
HW C - Filter Moisture Indicator	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	7	1Q FY04	0	NONE	0	7	7
HW C - SSS CCA/Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	320	1Q FY04	0	NONE	0	320	320
HW C - CP Protection Blast Operational Analysis	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	330	1Q FY04	0	NONE	0	330	330
SW SB - Automatic Power Transfer Switch for CPEMEDS	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	150	25	1Q FY03	0	NONE	0	NONE	0	175	0
HW C - 28VDC M93 Gas Particulate Filter Unit	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	200	1Q FY05	0	200	0
HW C - Land-based Aged Filter Capacity	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	400	1Q FY05	0	400	0
HW C - Individual Distribution Breathing Air Hose	MIPR	NSWCDD, Dahlgren, VA	U	0	0	NONE	200	1Q FY04	0	NONE	0	200	0
SCPE													
SW SB - CPS Fan, Electronic Differential Pressure Gauge, Filter Performance - Development	WR	NSWCDD, Dahlgren, VA	U	175	86	1Q FY03	0	NONE	0	NONE	0	261	266
Subtotal I. Product Development:				2510	1474		932		1008		0	5924	

Remarks:

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>						PROJECT <b>CO5</b>		
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CBPS</b>													
ES S - Shelter Government Engineering Support	MIPR	PM NBCDS, Natick, MA, CECOM, FT. Belvoir, VA	U	100	129	1Q FY03	0	NONE	0	NONE	0	229	0
ILS S - Shelter - Contractor ILS/Engineering Support	C/CPFF	GEO-Centers, Natick, MA	C	103	109	1Q FY03	0	NONE	0	NONE	0	212	0
<b>SCPE</b>													
TD/D SB - Update/Develop TDPs, Perf Specs, Drawings, and Reports	WR	NSWCDD, Dahlgren, VA	U	1028	97	1Q FY03	0	NONE	0	NONE	0	1125	1125
Subtotal II. Support Costs:				1231	335		0		0		0	1566	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBPS													
DTE S - Shelter - Development Test and Evaluation	MIPR	RDECOM, Natick, MA	U	0	88	2Q FY03	0	NONE	0	NONE	0	88	0
JCPE													
OTHT C - 200 CFM Gas Filter - Live Agent Testing	MIPR	RDECOM, APG, MD	U	388	194	1Q FY03	0	NONE	0	NONE	0	582	582
OTHT C - 100 CFM Gas Filter - Live Agent Testing	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	200	1Q FY04	0	NONE	0	200	200
OTHT C - Shipboard CPS Supply Fans	WR	NSWCDD, Dahlgren, VA	U	0	80	1Q FY03	100	1Q FY04	0	NONE	0	180	200
OTHT SB - Modified M28 Liner System for Large Capacity Shelters	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	91	1Q FY03	100	1Q FY04	0	NONE	0	191	191
OTHT SB - Capability Sets System Engineering	MIPR	Various	U	675	214	1Q FY03	0	NONE	0	NONE	0	889	914
OTHT C - 2000 CFM Particulate Filter	MIPR	RDECOM, Edgewood, MD	U	150	275	1Q FY03	0	NONE	0	NONE	0	425	425
OTHT C - Improved Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	305	1Q FY03	25	1Q FY04	0	NONE	0	330	350
OTHT C - Improved Liner Materials/Construction/Closures	MIPR	RDECOM, Natick, MA	U	0	160	1Q FY03	403	1Q FY04	153	1Q FY05	0	716	1331
OTHT C - Shipboard CP Automation	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	50	1Q FY04	0	NONE	0	50	50

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT C - CB Shelter System Extreme Enviroments	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	285	1Q FY04	135	1Q FY05	0	420	420
DTE C - Filter Moisture Indicator	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	6	1Q FY04	0	NONE	0	6	6
OTHT C - SSS CCA/Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	0	NONE	250	1Q FY05	0	250	250
OTHT C - TALP Testing for MGPTS	MIPR	Various	U	175	25	1Q FY03	75	1Q FY04	0	NONE	0	275	0
OTHT C - Automatic Power Transfer Switch For CPEMEDS	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	25	1Q FY03	0	NONE	0	NONE	0	25	0
OTHT C - Testing of CP Latrine for CPEMEDS	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	20	1Q FY03	37	1Q FY04	0	NONE	0	57	0
OTHT C - FFA 400-100 and M93 Motor/Blower	MIPR	ECBC, Edgewood, MD	U	0	20	1Q FY03	0	NONE	0	NONE	0	20	0
DTE S - CP Protection Blast Operational Analysis	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	0	NONE	280	1Q FY05	0	280	0
<b>SCPE</b>													
OTHT SB - Improved CPS Fan - Shipboard Testing	WR	NSWCDD, Dahlgren, VA	U	229	138	1Q FY03	0	NONE	0	NONE	0	367	367
OTHT SB - Filters - Various Component Testing and Testing Electronic Differential Pressure Gauge	WR	NSWCDD, Dahlgren, VA	U	935	93	1Q FY03	0	NONE	0	NONE	0	1028	1028

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT C - HEPA Filter TICs/TIMs Evaluation	WR	NSWCDD, Dahlgren, VA	U	200	146	1Q FY03	0	NONE	0	NONE	0	346	346
Subtotal III. Test and Evaluation:				2752	1874		1281		818		0	6725	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CBPS</b>													
PM/MS S - Management Support	MIPR	PM NBCDS, Natick, MA	U	24	25	1Q FY03	0	NONE	0	NONE	0	49	0
<b>JCPE</b>													
PM/MS S - Overall Program Management and Integrated Product Team Oversight	WR	NSWCDD, Dahlgren, VA	U	729	203	1Q FY03	461	1Q FY04	564	1Q FY05	0	1957	1403
PM/MS S - Integrated Product Team Support	MIPR	Various	U	456	100	1Q FY03	200	1Q FY04	200	1Q FY05	0	956	820
<b>JTCOPS</b>													
PM/MS S - Preparation of Acquisition Documentation	MIPR	PM NBCDS, APG, MD		420	0	NONE	0	NONE	0	NONE	0	420	0



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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>CO5</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SCPE													
PM/MS S - Overall Program Management	WR	NSWCDD, Dahlgren, VA	U	395	95	1Q FY03	0	NONE	0	NONE	0	490	490
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	49	NONE	0	NONE	0	49	0
Subtotal IV. Management Services:				2024	423		710		764		0	3921	

Remarks:

<b>TOTAL PROJECT COST:</b>	8517	4106		2923		2590		0	18136
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Project CO5

## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CBPS																																
CBPS P3I- Initiate Program					1Q	—			4Q																							
CBPS P3I- Develop Statement of Work (SOW) for Contract		2Q	3Q																													
CBPS P3I- Develop Design Concept		2Q	—		—		4Q																									
CBPS P3I- Contract for Design and Virtual Prototyping			3Q	—			2Q																									
CBPS P3I- Contract to Fabricate Two Prototypes						3Q	—		2Q																							
Full Materiel Release						3Q	—		1Q																							
JCPE																																
Develop and Test FFA400-100 and M93 MCPE		>>	—		—		4Q																									
Develop and Test Improved Ship CPS Motors					1Q	—			4Q																							
Agent Testing 100/200 CFM Gas Filters		1Q	—		—		4Q																									
Market Survey and Test Latrine CPEMEDS		>>	—		—		1Q																									

## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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 2K CFM Particulate Filters		1Q																														
Develop Modified M28 Liner-Lg Cap Shelters							3Q																									
Develop and Test Automatic Power Transfer Switch for CPEMEDS			2Q																													
Improved Recirculation Filter Unit																																
Noise Abatement for CB Shelter Systems																																
100/200 CFM Gas Filter Service Life Testing																																
Develop Thermal Efficiency of CB Protected Shelter Systems																																
CCA Requirements for NATO																																
Logistical Support for Prior Tasks																																
CP Modification Kit for Heater Systems																																
CB Filter Blower Heat Load																																
CB Liners for Long Term Storage																																

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
CB Liner Seam Tester			3Q					4Q																								
Improved Repair Process for CB Liners			3Q					4Q																								
Develop and Test TALP for MGPTS							2Q					2Q																				
Capability Sets System Engineering			3Q					4Q																								
Develop Improved Airlock			3Q									4Q																				
Develop Improved Liner-Mat/Constr/Closures			3Q													4Q																
Develop and Test Ship CP Automation									1Q			4Q																				
Develop and Test Filter Moisture Indicator									1Q			4Q																				
Develop and Test SSS CCA/Airlock									1Q			2Q																				
Develop and Test CB Shelter Extreme Environments									1Q			3Q																				
Develop and Test 100/200 CFM Gas Filters-TICs												1Q				4Q																
Develop and Test CP Blast Operations Analysis									1Q															4Q								
28VDC M93 Gas Particulate Filter Unit												1Q				4Q																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>CO5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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)																																	
Land-based Aged Filter Capacity													1Q	—————			4Q																
SCPE																																	
Define CPS Fan Performance Specification	>>	—————			1Q																												
Fan Testing and Evaluation (Shipboard)	>>	—————			4Q																												
Develop and Test Electronic Differential Pressure Gauge	>>	—————			4Q																												
CPS Filter TICs/TIMs Evaluation	>>	—————			4Q																												

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
DE5 DECONTAMINATION SYSTEMS (SDD)	4415	8586	3337	5710	5412	9910	4782	Continuing	Continuing

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

**Project DE5 DECONTAMINATION SYSTEMS (SDD):** This project funds System Development and Demonstration (SDD) of decontamination equipment for the Joint Service Family of Decontamination Systems (JSFDS). The JSFDS consists of a family of decontaminants and a family of applicators that provide each Service with the capability to decontaminate mission critical assets to restore mission operations. These items will be used to decontaminate equipment, personnel, and vital areas to sustain critical cargo flow and operation tempo at ports, airfields, logistic nodes, and key command and control centers.

The JSFDS program was subdivided into four blocks until the program was restructured in FY03 to support an evolutionary acquisition strategy. The JSFDS will consist of a Joint Service Man-Portable Decontamination System (JSM-PDS), a small-scale and large-scale Joint Service Transportable Systems (JSTDS), a Joint Service Stationary Decontamination System (JSSDS) and a Joint Service Personnel/Skin Decontamination System (JSPDS). The initial increment for these systems will provide the warfighter with an enhanced fixed site, equipment and personnel decontamination capability. Follow-on increments will increase fielded capability through technology insertion.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS FAMILY OF DECON SYSTEMS (JSFDS)	4415	8441	3337
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>

**FY 2003 Accomplishments:**

- 288 JSFDS - Completed Operational Test (OT) report for decontaminant to satisfy CENTCOM UNS. Conducted follow-on testing on CENTCOM UNS decontaminant to resolve issues identified during Development Testing (DT) and OT.
- 77 JSFDS - Completed foreign comparative testing of Reactive Skin Decontamination Lotion (RSDL) to support submission of to the Food and Drug Administration.
- 300 JSFDS - Completed downselection testing, evaluated test results and down-selected skin decontaminant for JSPDS contract award.
- 600 JSFDS - Awarded contract for JSPDS skin decontaminant and initiated development testing (DTIII) to address outstanding safety, wound compatibility and packaging issues.
- 1615 JSFDS - Restructured program to reflect an evolutionary acquisition strategy that will expedite fielding of an increased capability to the warfighter. Continued development of program documentation.
- 1535 JSFDS - Performed test methodology and laboratory capability improvements to support testing of the JSM-PDS, JSTDS and JSSDS to include ability to perform larger scale decontamination operations with simulants. Developed and validated new live agent and simulant test methodologies to aide bridging the gap between development and operational testing. Revised the Test and Evaluation Master Plan (TEMP).

**Total** 4415

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>
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**FY 2004 Planned Program:**

- 794 JSFDS - Continue development testing (DT III) to address outstanding safety, wound compatibility and packaging issues.
- 6040 JSFDS - Initiate JSM-PDS and JSTDS, small-scale and large-scale, DT I downselection testing to include live agent system level testing.
- 907 JSFDS - Continue development of program documentation, such as the Request for Proposal, Logistics Support Plan and System Acquisition Management Plan. Manage contracting effort and downselection process.
- 700 JSFDS - Perform engineering and logistics trade off studies for the JSM-PDS and JSTDS.

**Total** 8441

**FY 2005 Planned Program:**

- 327 JSFDS - Complete packaging testing and continue long-term safety and wound compatibility tests for JSPDS (DT III).
- 2810 JSFDS - Complete DTI operational assessment (OA)/DT II and initiate DT III for JSM-PDS and JSTDS.
- 200 JSFDS - Continue development of program documentation, such as the Request of Proposal, Logistics Support Plan and System Acquisition Management Plan. Manage contracting effort and downselection process.

**Total** 3337

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	145	0
RDT&E Articles (Quantity)	0	0	0



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>
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**FY 2004 Planned Program:**

- 145 SBIR - Small Business Innovative Research

**Total 145**

<b>C. <u>Other Program Funding Summary:</u></b>								<u>To Compl</u>	<u>Total Cost</u>
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)	<u>FY 2003</u> 10959	<u>FY 2004</u> 7319	<u>FY 2005</u> 6426	<u>FY 2006</u> 0	<u>FY 2007</u> 11680	<u>FY 2008</u> 19446	<u>FY 2009</u> 30618	Cont	Cont

Project DE5/Line No: 082

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Exhibit R-2a (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>

**D. Acquisition Strategy:**

JSFDS                      The JSFDS program will use an evolutionary acquisition strategy with spiral development and will produce four distinct products. 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.

JSSSED                      Utilize a three increment approach to address individual key capabilities to reduce program risk and support production schedule.

1. JSSSED/XM25: Sensitive Equipment/Items Decontamination
2. Aircraft/Vehicle Interior/Cargo Decontamination
3. On the Move Aircraft/Vehicle Interior/Cargo Decontamination

Investigate all technologies to determine their utility for all three decontamination increments. Mitigation of technical risk associated with less mature technologies will take longer with the aircraft/vehicle interior/cargo decontamination and on the move aircraft/vehicle interior/cargo decontamination systems.

Competitive award for JSSSED/XM25 and aircraft/vehicle interior/cargo decontamination leading to type classification. Decontamination on the move may be a pre-planned product improvement (P3I) of aircraft/vehicle interior/cargo decontamination systems.

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>
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I. Product Development: Not applicable

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
ILS S - Documentation and Analyses	MIPR	Various	U	0	400	2Q FY03	500	3Q FY04	0	NONE	0	900	0
ES S - Requirements Studies	MIPR	Various	U	0	415	2Q FY03	200	3Q FY04	0	NONE	0	615	0
ES S - Performance Specification Development	MIPR	Various	U	0	400	2Q FY03	0	NONE	0	NONE	0	400	0
Subtotal II. Support Costs:				0	1215		700		0		0	1915	

Remarks:

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>DE5</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFDS													
OTE S - DF200 CENTCOM UNS Operational Test	MIPR	AFOTEC, Kirtland AFB, NM	U	0	65	1Q FY03	0	NONE	0	NONE	0	65	0
DTE S - DF200 CENTCOM UNS Development Test	C/CPFF	Battelle, Stafford, VA	C	0	223	2Q FY03	0	NONE	0	NONE	2900	3123	0
OTHT SB - Foreign Comparative Test Skin Decontaminant	MIPR	USAMMDA, Frederick, MD	C	0	77	2Q FY03	0	NONE	0	NONE	0	77	0
OTHT S - JSFDS Operational Test Planning	MIPR	Various	U	0	228	2Q FY03	430	3Q FY04	0	NONE	0	658	0
OTHT S - JSFDS Test Methodology and Capability Improvements	MIPR	Various	U	0	582	3Q FY03	0	NONE	0	NONE	0	582	0
OTHT S - JSFDS Test Planning and Procedure Developemnt	MIPR	Various	U	0	300	2Q FY03	0	NONE	0	NONE	0	300	0
OTHT S - JSFDS Test and Evaluation Master Plan Development	MIPR	Various	U	0	425	2Q FY03	0	NONE	0	NONE	0	425	0
DTE S - JSPDS Testing	C/CPFF	Various	C	0	600	4Q FY03	794	2Q FY04	327	1Q FY05	0	1721	0
DTE S - JSM-PDS and JSTDS DT I Testing	MIPR	Various	U	0	0	NONE	5610	3Q FY04	0	NONE	0	5610	0
DTE S - JSM-PDS and JSTDS DT II/OA Testing	MIPR	Various	U	0	0	NONE	0	NONE	2010	2Q FY05	0	2010	0

Project DE5	Page 110 of 180 Pages	Exhibit R-3 (PE 0604384BP)
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**UNCLASSIFIED**

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>DE5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE S - JSM-PDS and JSTDS DT III Testing	MIPR	Various	U	0	0	NONE	0	NONE	800	4Q FY05	0	800	0
Subtotal III. Test and Evaluation:				0	2500		6834		3137		2900	15371	

Remarks:

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JSFDS</b>													
PM/MS S - Programmatic Support	MIPR	Various	U	246	400	1Q FY03	232	3Q FY04	100	1Q FY05	0	978	0
PM/MS S - Programmatic Support	C/CPFF	Various	C	0	300	3Q FY03	275	3Q FY04	100	1Q FY05	0	675	0
PM/MS S - Downselection and Contracting Process Management	MIPR	Various	U	0	0	NONE	400	2Q FY04	0	NONE	0	400	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	145	NONE	0	NONE	0	145	0
Subtotal IV. Management Services:				246	700		1052		200		0	2198	

Remarks:

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>DE5</b>
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TOTAL PROJECT COST:	246	4415		8586		3337		2900	19484
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>DE5</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
Skin Decontaminant (Block III) DT I			3Q				2Q																									
Restructuring of Requirements and Acquisition Strategy											3Q				1Q																	
Joint Service Personnel/Skin Decontamination System (JSPDS) Developmental Contract Award								4Q																								
Joint Service Personnel/Skin Decontamination System (JSPDS) Milestone (MS) B											2Q																					
JSPDS Developmental Testing (DT) II											1Q					2Q																
JSPDS Shelf Life Stability/Surveillance Testing											1Q																					1Q
JSPDS Operational Test (OT)																			2Q					4Q								
JSPDS Full Rate Production (FRP) Decision (Milestone C (MS C))																							1Q									
Joint Service Man-Portable and Transportable Decontamination Systems (JSM-PDS and JSTDS) MS B											2Q																					

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

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 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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)																																	
JSM-PDS and JSTDS Developmental Testing (DT) I											4Q				3Q																		
JSM-PDS and JSTDS Operational Assessment (OA)/Developmental Test (DT) II															3Q	4Q																	
JSM-PDS and JSTDS Developmental Testing (DT) III															4Q	1Q																	
JSM-PDS and JSTDS MS C Low Rate Initial Production (LRIP)																2Q																	
JSM-PDS and JSTDS Developmental Test (DT) IV/Product Qualification Test																2Q	3Q																
JSM-PDS and JSTDS OT																	3Q		1Q														
JSM-PDS and JSTDS Full Rate Production (FRP) Decision																			1Q														



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>IP5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
IP5 INDIVIDUAL PROTECTION (SDD)	36487	37719	24067	5436	970	0	8677	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.

Funding is provided for:

- (1) Design of Aircrew Eye-Respiratory Protection (AERP) systems modification kits for aircraft compatibility.
- (2) Development of a Joint Protective Aircrew Ensemble (JPACE) to standardize aircrew ensembles across the services and reduce user fatigue.
- (3) Development of the Joint Service Aircrew Mask (JSAM), to replace multiple Service-specific aircrew chemical protective masks. JSAM will be a NATO compliant, chem/bio protection system with positive pressure breathing capabilities. JSAM will be compatible with existing life-support equipment and can be used during escape and evasion in a chemical, biological, or radiological environment. It is the only mask that will incorporate CBRN protection and anti-G protection for fighter aircrews; and will provide increased protection, field of view, and improved heat stress.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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(4) 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.

(5) Development of a JSLIST Block I glove upgrade and JSLIST Block II glove upgrade to meet joint aircrew and ground hand protection requirements.

(6) Development of a JSLIST Multi-Purpose Sock (MPS).

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
AERP AIRCRAFT MODIFICATIONS	81	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 81 AERP - Continued maintaining configuration control on B-2 Aircraft modification design.

**Total**      81

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT PROTECTIVE AIRCREW ENSEMBLE	6381	6133	3635
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 5658 JPACE - Completed DT IIB and DT IIA2 testing. Conducted Critical Design Review (CDR). Fabricated 578 prototype ensembles of one candidate for combined DT/Operational Test (OT) (578 total at \$440 each). Initiated combined DT/OT system level testing and initial Operational Assessment (OA) to verify system level performance and assess operational suitability and durability. Testing included aircraft integration testing (windblast, ejection, water egress, early flight, and aircraft compatibility in support of obtaining flight clearance of Field Durability Developmental Test (FDDT.)
- 723 JPACE - Continued development and update of program, logistics, and technical documentation required to ensure that ensembles will be fully supported when fielded. Updated garments specifications and patterns.

**Total** 6381

**FY 2004 Planned Program:**

- 4130 JPACE - Continue combined DT/OT with durability and other system level testing, including chemical Man in Simulant Test (MIST), aerosol test, and swatch test. Develop and test contaminated doffing procedures, and acquire final safe-to-fly decision from the services.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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**FY 2004 Planned Program (Cont):**

- 2003 JPACE - Prepare for Independent Operational Test & Evaluation (IOT&E). Conduct Milestone (MS) C decision for LRIP of ensembles. Award contract option to manufacture LRIP ensembles. Continue developing and updating program, logistics, and technical documentation required to ensure that ensembles will be fully supported when fielded. Update and finalize garment specifications and patterns based on DT/OT results.

**Total** 6133

**FY 2005 Planned Program:**

- 2485 JPACE - Complete IOT&E. Conduct MS C decision for LRIP of ensembles. Award contract options to manufacture LRIP ensembles.
- 750 JPACE - Finalize garment specifications and patterns. Conduct System Verification Review (SVR). Conduct Full Rate Production decision.
- 400 JPACE - Finalize program, logistics, and technical documentation required to ensure that ensembles are fully supported.

**Total** 3635

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS AIRCREW MASK (JSAM)	11661	11184	12511
RDT&E Articles (Quantity)	0	0	332

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**FY 2003 Accomplishments:**

- 2913 JSAM - Received Milestone B approval, awarded the System Demonstration and Development (SDD) contract, continued program management activities, conducted start of work meeting, and the preliminary design review.
- 4641 JSAM - Continued systems engineering, design and integration tasks. Began logistics activities and sustainment planning. Initialized program working groups.
- 681 JSAM - Initiated developmental manufacturing process planning for material, parts and peculiar support equipment. Began preliminary tooling efforts with vendors and initiated a limited set of subcomponent level tests.
- 3426 JSAM - Initiated fabrication of models and prototype assemblies for various size mask system parts for functionality evaluation by the integration control groups.

**Total** 11661

**FY 2004 Planned Program:**

- 4831 JSAM - Continue system design, engineering and fabrication activities; develop production processes and plan for adequate tooling in preparation for fabrication of units.
- 2795 JSAM - Continue contractor and government developmental test and evaluation planning activities, to include integration with selected aircraft.
- 3558 JSAM - Continue program management, logistics and sustainment planning. Prepare program and technical documentation.

**Total** 11184

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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**FY 2005 Planned Program:**

- 4387 JSAM - Complete contractor developmental testing. Continue documentation and planning in preparation for testing. Initiate Government developmental test and evaluation.
- 2029 JSAM - Complete material purchase, fabrication, and assembly of 332 DT units at an average unit cost of \$6112.
- 2841 JSAM - Continue system design, engineering and fabrication activities; develop production processes and ensure tooling is adequate to fabricate units.
- 3254 JSAM - Continue contract and government program management, logistics and sustainment planning.

**Total** 12511

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS GENERAL PURPOSE MASK	13219	14975	3009
RDT&E Articles (Quantity)	0	0	1000

**FY 2003 Accomplishments:**

- 699 JSGPM - Continued preparation of program/project documentation. Documentation includes Single Acquisition Management Plan (SAMP), the Manpower and Personnel Integration (MANPRINT) Plan, and Performance Specifications.
- 371 JSGPM - Continued Logistics Support Planning. This effort includes development of manuals and finalization of supportability plans.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 7300 JSGPM - Continued System Demonstration. System Demonstration efforts included system support packages for Production Qualification Testing, and Initial Operational Testing and Evaluation.</li> <li>• 2739 JSGPM - Continued documentation and planning for Developmental and Operational Testing (DT/OT). Tested redesigned prototypes to assess shortcomings identified during System Integration Phase.</li> <li>• 2110 JSGPM - Continued development of the JSCESM as a lightweight complement to the JSGPM against limited threats.</li> </ul> <p><b>Total 13219</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 5454 JSGPM - Continue System Demonstration. System Demonstration includes system support packages for Production Qualification Testing and Initial Operational Testing and Evaluation.</li> <li>• 935 JSGPM - Continue preparation of program/project documentation. Documentation includes the Manpower and Personnel Integration (MANPRINT) Plan, and Performance Specifications.</li> <li>• 5655 JSGPM - Continue Developmental and Operational Testing. Generate test incident reports and corrective action plans to address test results during mask design and prototype production.</li> <li>• 438 JSGPM - Continue Logistics Support Planning. This effort includes development of manuals, and finalization of supportability plans.</li> <li>• 1934 JSGPM - Complete development of the JSCESM as a lightweight complement to the JSGPM against limited threats.</li> <li>• 559 JSGPM - Initiate support for the development of the Improved Protective Mask (IPM).</li> </ul>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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**FY 2004 Planned Program (Cont):**

**Total** 14975

**FY 2005 Planned Program:**

- 1509 JSGPM - Complete System Demonstration. System Demonstration includes system support packages for Production Qualification Testing and Multiservice Operational Testing and Evaluation.
- 500 JSGPM - Complete preparation of program/project documentation. Documentation includes the Single Acquisition Management Plan and performance specifications.
- 700 JSGPM - Complete Development (Production Qualification Testing) and Operational (Limited User Test) Testing. Complete test and evaluation reports. Purchase 1000 test articles at \$150 each, for a total of \$150,000 for Multiservice Operational Test and Evaluation.
- 300 JSGPM - Complete developmental Logistics Support Planning. This effort includes completion of manuals, and finalization of supportability plans.

**Total** 3009

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
PROTECTIVE CLOTHING (JSLIST)	5145	4781	4912
RDT&E Articles (Quantity)	0	0	0



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<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 300 JSLIST Block I Glove Upgrade - Completed air/ground Operational Test (OT) and completed Milestone (MS) C.</li> <li>• 474 JSLIST Block II Glove Upgrade - Awarded multiple competitive contracts for system development and demonstration.</li> <li>• 2434 JSLIST Block II Glove Upgrade - Conducted durability and chemical validation testing for air/ground missions.</li> <li>• 401 JSLIST Block II Glove Upgrade - Conducted project management and planned test readiness reviews.</li> <li>• 250 JSLIST Multi-Purpose Sock (MPS) - Conducted field durability trials for air/ground missions.</li> <li>• 786 JSLIST MPS - Conducted chemical validation test trials.</li> <li>• 500 JSLIST MPS - Conducted air/ground OT and prepared MS C documentation.</li> </ul> <p><b>Total</b> 5145</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2500 JSLIST Block II Glove Upgrade - Complete IOT&amp;E and initiate chemical validation testing.</li> <li>• 400 JSLIST Block II Glove Upgrade - Conduct preparations for MS C Low Rate Initial Production (LRIP).</li> <li>• 623 JSLIST MPS - Complete air/ground operational tests and complete MS C.</li> <li>• 1258 JSLIST Mulo - Form alternative footwear solutions project team, conduct market survey, form acquisition strategy, initiate durability and chemical testing.</li> </ul> <p><b>Total</b> 4781</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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**FY 2005 Planned Program:**

- 2912 JSLIST Block II Glove Upgrade - Complete chemical agent validation testing and complete IOT&E.
- 300 JSLIST Block II Glove Upgrade - Complete preparations for MS C Full Rate Production (FRP).
- 1700 JSLIST Mulo - Complete alternative footwear solutions chemical and durability testing, complete IOT&E, and complete MS C.

**Total** 4912

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	646	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 646 SBIR - Small Business Innovative Research

**Total** 646

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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**C. Other Program Funding Summary:**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
AF0015 AIRCREW EYE/RESPIRATORY PROT (AERP)	1779	0	0	0	0	0	0	0	1779
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	3115	0	0	0	0	0	0	0	3115
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	9459	8582	8196	8629	0	0	0	0	34866
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M	8815	0	0	0	0	0	0	0	8815
M99501 MASK, AIRCRAFT M45	991	0	0	0	0	0	0	0	991
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A	2486	0	0	0	0	0	0	0	2486
MA0400 PROTECTIVE CLOTHING	304611	73615	93650	92097	82902	86535	88913	Cont	Cont
MA0480 SECOND SKIN, MASK MCU-2/P	8142	0	0	0	0	0	0	0	8142
N00020 CB RESPIRATORY SYSTEM - AIRCREW	3073	0	0	0	0	0	0	0	3073

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**D. Acquisition Strategy:**

**AERPMODS**      Each aircraft in the USAF inventory that has a chemical defense requirement has been/will be modified for Aircrew Eye Respiratory Protection (AERP). Individual aircraft program offices control the design and implementation of AERPMODS, with 311 HSW/YAC providing overall system program management and technical assistance services.

**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), Low Rate Initial Production (LRIP), and Full Rate Production (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). The purpose of awarding two contracts for PDRR followed by one for SDD (with production options) was to ensure the value of competition throughout the program. The program office issued the SDD RFP prior to the end of the PDRR effort. The SDD award was made to the offerors whose proposal, based on the established evaluation criteria as written in section M of the solicitation, provided the best value to the government.

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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 (TOL).
PROT CLTH	The JSLIST acquisition strategy consolidates Service and USSOCOM chemical protective ensemble (suits, gloves, boots) development in order to eliminate redundant efforts and obtain significant efficiencies by eliminating the different ensemble types currently fielded among the Services.

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>AERPMODS</b>													
HW C - Engineering Configuration Control Maintenance	PO	Various	U	163	81	1Q FY03	0	NONE	0	NONE	0	244	0
<b>JPACE</b>													
HW C - Prototype Pattern Design	MIPR	NCTRF, Natick, MA	U	828	656	2Q FY03	527	1Q FY04	150	1Q FY05	0	2161	2161
HW S - Prototype Procurement	C/FFP	Creative Apparel Associates, Belmont, ME	C	88	224	3Q FY03	0	NONE	350	2Q FY05	0	662	570
<b>JSAM</b>													
HW S - Contractor Development	C/CPAF	Scott Aviation, Buffalo, NY	C	0	7209	2Q FY03	4831	2Q FY04	4907	2Q FY05	0	16947	1831
<b>JSGPM</b>													
HW S - Develop JSGPM Hardware	C/CPIF	Avon, Inc. Cadillac, MI	C	7157	7300	1Q FY03	5454	1Q FY04	1500	1Q FY05	0	21411	0
HW S - Develop JSCESM	C/FFP	Quick Protective Systems, Stuart, FL	C	0	1709	3Q FY03	1200	1Q FY04	0	NONE	0	2909	0
<b>PROT CLTH</b>													
HW SB - Block II Prototypes	C/FFP	TBS	U	0	500	2Q FY03	0	NONE	0	NONE	0	500	0
<b>Subtotal I. Product Development:</b>													
				8236	17679		12012		6907		0	44834	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JPACE</b>													
OTHT S - Hazard Prediction Model - Independent Verification and Validation	WR	NAWCAD, Patuxent River, MD	U	704	101	2Q FY03	344	1Q FY04	100	1Q FY05	0	1249	1249
ILS S - Systems Logistics	WR	NAWCAD, Patuxent River, MD	U	302	55	2Q FY03	242	1Q FY04	300	1Q FY05	0	899	1012
<b>JSAM</b>													
TD/D SB - JSAM Logistics, Training, and Data	C/CPAF	Scott Aviation, Buffalo, NY	C	0	188	2Q FY03	167	2Q FY04	461	2Q FY05	0	816	0
<b>JSGPM</b>													
ES S - Engineering Support	MIPR	JPMO - IP, Quantico, VA	U	400	468	1Q FY03	438	1Q FY04	100	1Q FY05	0	1406	2852
TD/D S - Technical Data and Documentation of JSGPM System	MIPR	JPMO - IP, Quantico, VA	U	250	206	1Q FY03	125	1Q FY04	100	1Q FY05	0	681	1000
ILS S - Logistics Support of JSGPM System	MIPR	JPMO - IP, Quantico, VA	U	336	190	1Q FY03	200	1Q FY04	100	1Q FY05	0	826	1700
ES S - Systems Engineering for JSCESM	MIPR	JPMO - IP, Quantico, VA - Various	U	1100	300	1Q FY03	200	1Q FY04	0	NONE	0	1600	0
ES S - Engineering Support	MIPR	Other Joint Services	U	357	386	1Q FY03	330	1Q FY04	0	1Q FY05	0	1073	0
TD/D S - Technical Data	MIPR	Other Joint Services	U	250	168	1Q FY03	125	1Q FY04	0	NONE	0	543	0
ILS S - Logistics Support	MIPR	Other Joint Services	U	300	150	1Q FY03	220	1Q FY04	0	NONE	0	670	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JPACE</b>													
DTE S - Aircraft Integration Testing	MIPR	NAWCAD, Patuxent River, MD	U	610	687	2Q FY03	40	1Q FY04	0	NONE	0	1337	1297
DTE S - Physical Property/Fit Testing	WR	NCTRF, Natick, MA	U	309	297	2Q FY03	256	1Q FY04	0	NONE	0	862	950
DTE C - Chemical Agent Testing	C/CPFF	Battelle, Columbus, OH	N	367	598	2Q FY03	367	1Q FY04	0	NONE	0	1332	965
DTE S - Chemical Testing	MIPR	USA DTC, Dugway, UT	U	1377	578	2Q FY03	918	1Q FY04	0	NONE	0	2873	2254
DTE S - Don/Doff Testing	WR	LANL, Los Alamos, NM	U	420	55	2Q FY03	218	1Q FY04	0	NONE	0	693	475
DTE S - Fit Testing	SS/FFP	Anthrotech, Yellow Springs, OH	C	106	73	3Q FY03	0	NONE	0	NONE	0	179	327
DTE S - Human Factors Testing	MIPR	RDECOM, Natick, MA	U	226	359	2Q FY03	32	1Q FY04	0	NONE	0	617	585
DTE S - Durability	MIPR	USA ATEC, Aberdeen, MD	U	0	828	2Q FY03	84	1Q FY04	0	NONE	0	912	1472
OTE S - Initial Operational Test and Evaluation	MIPR	AFOTEC DET 1, Albuquerque, NM	U	150	350	2Q FY03	548	1Q FY04	900	1Q FY05	0	1948	2912
OTE S - Initial Operational Test and Evaluation	MIPR	USA ATEC, Aberdeen, MD	U	40	10	2Q FY03	148	1Q FY04	935	1Q FY05	0	1133	1182
OTE S - Initial Operational Test and Evaluation	WR	COMOPTEVFOR, Norfolk, VA		0	70	2Q FY03	90	1Q FY04	300	1Q FY05	0	460	1256
<b>JSAM</b>													
OTHT SB - Govt Developmental Test	MIPR	Various	U	0	92	2Q FY03	1201	3Q FY04	2803	3Q FY05	0	4096	0
OTE S - Govt Operational Test	MIPR	Various	U	0	404	2Q FY03	165	3Q FY04	165	3Q FY05	0	734	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE S - Contractor Test and Integration	PO	TBS		0	185	2Q FY03	1428	2Q FY04	1382	2Q FY05	0	2995	0
<b>JSGPM</b>													
OTHT SB - Plan and Conduct of Developmental Testing of JSGPM System	MIPR	ATEC, Falls Church VA; DTC; HRED, APG, MD	U	788	350	1Q FY03	2658	1Q FY04	709	1Q FY05	0	4505	1250
OTE S - Plan and Conduct Operational Testing of JSGPM System	MIPR	Various	U	538	836	1Q FY03	1938	1Q FY04	0	NONE	0	3312	8050
OTE C - PQT for IPM Variant	MIPR	JPMO - IP, Quantico, VA		0	0	NONE	374	2Q FY04	0	NONE	0	374	0
<b>PROT CLTH</b>													
OTE S - Block II Glove Test	MIPR	Various	U	685	2074	3Q FY03	2281	1Q FY04	2912	1Q FY05	0	7952	0
DTE S - JSLIST MPS Durability Trials	MIPR	Various	U	0	170	2Q FY03	200	2Q FY04	1700	1Q FY05	0	2070	0
DTE C - JSLIST Mulo Chemical Validation	MIPR	Various	U	0	650	3Q FY03	1200	1Q FY04	0	NONE	0	1850	0
OTE C - JSLIST MPS Air/Ground Operational Test	C/FPI	Various	C	0	430	1Q FY03	400	2Q FY04	0	NONE	0	830	0
<b>Subtotal III. Test and Evaluation:</b>													
				5616	9096		14546		11806		0	41064	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>JPACE</b>													
PM/MS S - Overall Program Coordination	WR	NAWCAD, Patuxent River, MD	U	840	626	2Q FY03	864	1Q FY04	300	1Q FY05	0	2630	2322
PM/MS SB - Air Force Program Coordination	MIPR	311 HSW Brooks AFB, TX	U	763	242	2Q FY03	90	1Q FY04	100	1Q FY05	0	1195	1203
PM/MS SB - Management Support	C/CPFF	Battelle, Columbus, OH	N	726	280	2Q FY03	1267	1Q FY04	0	NONE	0	2273	978
PM/MS SB - US Army Program Coordination	MIPR	PMSOLDIER, Ft. Belvoir, VA	U	0	146	2Q FY03	0	1Q FY04	100	1Q FY05	0	246	470
PM/MS SB - US Marine Corps Program Coordination	WR	MARCORSYSCOM, Quantico, VA	U	0	146	2Q FY03	98	1Q FY04	100	1Q FY05	0	344	344
<b>JSAM</b>													
PM/MS C - Program Management/Management Support	MIPR	Various	U	0	2420	2Q FY03	2164	2Q FY04	2332	2Q FY05	0	6916	0
PM/MS S - Contractor Program Management	C/CPAF	TBS	C	0	1163	2Q FY03	1228	2Q FY04	461	2Q FY05	0	2852	0
<b>JSGPM</b>													
PM/MS S - Program Management by Army (Lead Service)	MIPR	JPMO - IP, Quantico, VA	U	574	556	1Q FY03	1113	1Q FY04	200	1Q FY05	0	2443	1400
PM/MS S - Program Management by Joint Services other than Army	MIPR	USN, USAF, USMC various locations	U	600	500	1Q FY03	500	1Q FY04	300	1Q FY05	0	1900	1900
PM/MS S - Program Management for JSCESM	MIPR	PM NBCDS, APG, MD	U	1100	100	1Q FY03	100	1Q FY04	0	NONE	0	1300	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PROT CLTH													
PM/MS C - Integrated Product Team Support	MIPR	Various	U	1060	961	1Q FY03	700	1Q FY04	300	1Q FY05	0	3021	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	646	NONE	0	NONE	0	646	0
Subtotal IV. Management Services:				5663	7140		8770		4193		0	25766	

Remarks:

<b>TOTAL PROJECT COST:</b>	24523	36487		37719		24067		0	122796
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Project IP5

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				
	1	2	3	4	1	2	3	4	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																																	
Developmental Testing - DT IIB				4Q	1Q																												
Pattern Finalization						2Q	—————			4Q																							
Developmental Test - Durability Testing							3Q	—————			4Q																						
Developmental Testing - Combined Developmental Testing (DT)/Operational Testing (OT) Assessment							4Q	—————			4Q																						
System Verification Review												1Q																					
Milestone C - Low Rate Initial Production (LRIP)														2Q																			
Independent Operational Testing														3Q	—————			2Q															
Award Low Rate Initial Production (LRIP) Delivery Order Contract Option														2Q																			
Full Rate Production (FRP) Decision																		2Q															
JSAM																																	
Milestone B Systems Development and Demonstration Contract Award In Process Review (IPR) (IP5)						1Q																											
System Demonstration and Development						1Q	—————											4Q															

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSAM (Cont)																																
Development Test													1Q			2Q																
Operational Test (Rotary Wing)																				3Q				2Q								
Operational Test (Fixed Wing)																				4Q				3Q								
Milestone C (Full Rate Production Decision)																								2Q								
JSGPM																																
Award Systems Demonstration Option				3Q																												
Conduct System Demonstration				3Q												2Q																
Documentation for Developmental Testing (DT) and Operational Testing (OT) Test				3Q								3Q																				
Developmental Testing (DT) PQT (Production Qualification Testing)												3Q				2Q																
Initial Evaluation Report													1Q																			
Prepare and Execute Log Spt Plan				3Q												1Q																
Preparation of Milestone C Documentation				3Q												1Q																
Limited User Test (LUT)												4Q	1Q																			
Milestone C TC In Process Review (IPR)																2Q																

<b>Exhibit R-4a, Schedule Profile</b>							DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IP5</b>
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D. <u>Schedule Profile (cont):</u>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSGPM (Cont)																																
Final Performance Specification												4Q																				
Production Contract Award																3Q																
Production Begins																3Q																
Material Release																				3Q												
Multiservices Operational Test and Evaluation (MOT&E) with Production Representative Articles																				2Q												
First Unit Equipped (FUE)/Initial Operational Capability (IOC)																								4Q								
PROT CLTH																																
JSLIST Block I Glove Operational Test (OT)								2Q																								
JSLIST Block I Glove Milestone C								2Q																								
JSLIST Block II - Started IPT and Program Documentation								1Q				4Q																				
JSLIST Block II Glove Conduct Developmental Test (DT)/Operational Test (OT)												2Q				3Q																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IP5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PROT CLTH (Cont)																																
JSLIST Block II Glove Milestone C Low Rate Initial Production (LRIP)															4Q																	
JSLIST MPS Foreign Compatibility Test (FCT) Data Transfer to System Design and Demonstration Phase.						1Q																										
JSLIST MPS Developmental Test (DT)/Operational Test (OT)						1Q	—	4Q																								
JSLIST MPS - Milestone C										1Q																						
JSLIST MPS - Production Contract Award										1Q																						
JSLIST - Initial Operational Test and Evaluation (IOT&E) Alternative Footwear Solutions															3Q	—		1Q														
JSLIST- Milestone C Alternative Footwear Solutions																		3Q														



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>IS5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
IS5 INFORMATION SYSTEMS (SDD)	0	0	18742	7105	1419	982	0	0	28248

**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 Effect 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).

JOEF will be a near real-time course of action analysis software tool developed in blocks. Using a detailed NBC hazard prediction, JOEF will be capable of modeling the operational impact that results from an CBRNE release or attack on fixed land assets, aerial ports of debarkation (Block I), seaports of debarkation (Block II), mobile land assets and littoral areas (Block III).

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>
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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. P3I will investigate new detectors/sensors and software changes to Service C4I systems.

IT Medical Surveillance will establish a biological defense information collection system that integrates available detection and diagnostic data, and provides performance verification and validation capabilities; while providing a system to decision makers that is functional and meets their needs.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT EFFECTS MODEL	0	0	5894
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>
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**FY 2005 Planned Program:**

- 1921 JEM Block I - Continue conduct of IV&V. Prepare for and achieve Class Accreditation. Perform financial management, scheduling, planning and reporting.
- 2950 JEM Block I - Continue conduct of Government developmental testing. Conduct Field trials. Finalize operational test plans. Initiate OT.
- 1023 JEM Block I - Perform software maintenance in support of DT. Initiate establishment of the Software Support Activity (SSA).

**Total** 5894

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT OPERATIONS EFFECTS FEDERATION	0	0	2485
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 2485 JOEF Block I - Continue IV&V. Conduct Developmental and Operational Testing.

**Total** 2485

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT WARNING & REPORTING NETWORK (JWARN)	0	0	10363
RDT&E Articles (Quantity)	0	0	0

**FY 2005 Planned Program:**

- 4831 JWARN - Continue Block II Development.
- 3013 JWARN - Continue Block II DT/OA .
- 2519 JWARN - Continue Program Management and Oversight and prepare documentation for MS C and conduct MS C for Low Rate Initial Production (LRIP) decision.

**Total** 10363

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>
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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	0	1104	5937	16703	30670	24308	0	0	78722
JC0208 JOINT EFFECTS MODEL (JEM)	0	0	998	998	999	500	0	0	3495
JC0209 JOINT OPERATIONAL EFFECTS FEDERATION (JOEF)	0	0	0	0	749	750	0	0	1499

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>

**D. Acquisition Strategy:**

JEM	The JEM program will use a three block evolutionary acquisition approach for the design, development, testing and fielding of JEM (Blocks I, II, and III). 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 Nuclear, Biological, and Chemical (NBC) models. A cost plus award/incentive fee contract will be used for model development.
JOEF	JOEF will be developed in three blocks. Block I provides an M&S analysis capability for assessing "fighter type" air base operability and aerial ports of debarkation (APODs). Output centered on sortie generation and cargo throughput respectively. Interoperable with Joint Warfare System (JWARS) Block I and will provide initial tools and data analysis to support CBD ORMS. Block II will further extend capabilities to include seaports of debarkation (SPODs) and other land based fixed site targets (e.g., depots) and will include: cargo throughput and manpower/hardware consideration trade-offs as well as the capability to link output to theater and campaign level models. Block III will add capabilities to include mobile land and littoral forces and will provide links into manpower, logistics and training planning architectures. A cost plus incentive fee contract will be utilized for the Block I effort with options to support Block II and III.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>IS5</b>

JWARN

The revised 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) limited, end-to-end JWARN capability to the warfighter by 4QFY04. This acceleration will be accomplished by leveraging the technology of an extant end-to-end JIC. The JIC will be completed early in the contract cycle, will be demonstrated in 2QFY04, and will be made available to key operational users by 4QFY04 in accordance with U.S. Central Command (CENTCOM) operational needs. 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.









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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>IS5</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JEM													
PM/MS S - Program Office - Planning & Programming	MIPR	SPAWARSYSCOM, San Diego, CA		0	0	NONE	0	NONE	521	1Q FY05	0	521	0
JOEF													
PM/MS S - Program Office - Planning and Programming	MIPR	Various		0	0	NONE	0	NONE	460	1Q FY05	0	460	0
JWARN													
PM/MS S - JWARN Management Support	MIPR	Various		0	0	NONE	0	NONE	2519	1Q FY05	0	2519	0
Subtotal IV. Management Services:				0	0		0		3500		0	3500	

Remarks:

TOTAL PROJECT COST:	0	0	0	18742	0	18742
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Project IS5

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Exhibit R-3 (PE 0604384BP)

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IS5**

D. <u>Schedule Profile:</u>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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					4Q																				
BLK I - Milestone B Decision											2Q																					
BLK I - Award System Development and Demonstration (SDD) Contract											2Q																					
BLK I - In Process Review (IPR)											2Q																					
BLK I - Developmental Testing (DT) (Contractor)												4Q																				
BLK I DT (Government)											4Q				3Q																	
BLK I Software Maintenance											4Q					1Q																
BLK I - Establish, Train, Stand Up Software Support Activity												1Q								3Q												
BLK I - Operational Testing (OT)															4Q					2Q												
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)																																

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IS5**

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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 - Post Deployment Software Support																																
JOEF																																
Concept and Technology Development Phase				4Q				4Q																								
BLK I - Milestone B											2Q																					
BLK I - Award Systems Development and Demonstration (SDD) Contract											2Q																					
BLK I - Software Development											2Q					3Q																
BLK I - Early Operational Assessment (EOA)												4Q																				
BLK I - Interim Progress Review													1Q																			
BLK I - Developmental Testing (DT)																4Q																
BLK I - Operational Testing (OT)																4Q																
BLK I - Milestone C (Limited Deployment)																				2Q												
BLK I - Full Rate Production (FRP) Decision																																

**Exhibit R-4a, Schedule Profile**

DATE  
**February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA5 - System Development and Demonstration (SDD)**

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IS5**

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																				3Q												
JWARN																																
System Design and Development (SDD) Contract Award								4Q	-----																							
Operational Assessment																				2Q	-----		4Q									
Milestone C																				3Q	-----		1Q									
Low Rate Initial Production (LRIP) Contract Award																				3Q	-----		1Q									
First Article Test																				4Q	-----		2Q									
Initial Operational Test and Evaluation (IOT&E)																																
Full Rate Production Milestone Decision																																
Full Rate Production																																
Full Operational Capability																																4Q

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>				PROJECT <b>MB5</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	34819	7264	7810	3643	14930	58935	71855	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, Next Generation Anthrax, Plague, Vaccinia Immune Globulin, and Equine Encephalitis vaccines.

The Critical Reagents Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/select agent and DNA biological detection requirements from Advanced Component Development and Prototype (ACD&P) 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. CRP was previously funded in BJ5 and was transferred to MB5 in FY04.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>
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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 agents. JBAIDS will be configured to support reliable, fast, and specific identification of biological 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. Also in Blocks II and III, in addition to mobile and fixed land site facilities, the JBAIDS will be used on aircraft (fixed and rotary wing) and ships. Only Block I is funded.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CRITICAL REAGENTS PROGRAM	0	3540	3096
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 780 CRP - Continue transition of International Task Force (ITF)-6B targets.
- 1560 CRP - Continue transition of Nucleic Acid Assays, validation of assays and select agent and DNA Panels.
- 700 CRP - Initiate insertion of ITF-6B agents into Polymerase Chain Reaction (PCR) and Electrochemiluminescence (ECL) formats.



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>
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**FY 2004 Planned Program (Cont):**

- 500 CRP - Develop and institute automation technology solutions to improve processes and operations of the clinical laboratory.

**Total 3540**

**FY 2005 Planned Program:**

- 833 CRP - Continue transition of ITF-6B targets.
- 1491 CRP - Continue transition of Nucleic Acid Assays, validation of assays, and scale-up of select agent and DNA panels.
- 772 CRP - Continue insertion of ITF-6B agents into PCR and ECL formats.

**Total 3096**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM	14804	3626	4714
RDT&E Articles (Quantity)	15	0	0

**FY 2003 Accomplishments:**

- 10925 JBAIDS BLK I - Awarded contract to develop a reusable, portable, modifiable biological agent identification and diagnostic system; purchased 15 test articles.

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<p><b>FY 2003 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2987 JBAIDS BLK I - Completed Test Evaluation Master Plan (TEMP) with Developmental and Operational Test and Evaluation (DOT&amp;E) oversight and four military services' operational test agencies; planned developmental testing (DT) efforts; and planned BW test sample preparation efforts.</li> <li>• 892 JBAIDS BLK I - Completed source selection efforts; achieved Milestone (MS) B.</li> </ul> <p><b>Total 14804</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1011 JBAIDS BLK I - Complete DT and and Operational Assessment (OA); achieve MS C.</li> <li>• 1687 JBAIDS BLK I - Develop hardware and assays; deliver test articles; conduct hardware qualification testing; and continue hardware engineering change proposal process, hardware upgrading and BW assay development.</li> <li>• 928 JBAIDS BLK I - Initiate Operational Testing (OT) planning efforts.</li> </ul> <p><b>Total 3626</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4714 JBAIDS BLOCK I - Complete BW assay development, OT and FDA 510(k) submission process.</li> </ul> <p><b>Total 4714</b></p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SMALLPOX VACCINE	20015	0	0
RDT&E Articles (Quantity)	0	0	0

**FY 2003 Accomplishments:**

- 19578 JVAP - Smallpox Vaccine - Continued Smallpox and Vaccinia Immune Globulin (VIG) stability studies. Completed fourth and fifth stages of a Phase 1 clinical trial (safety and immunogenicity).
- 437 JVAP - Smallpox Vaccine - Submitted Investigational New Drug (IND) annual reports and manufacturing amendments to the FDA for Smallpox vaccine and VIG.

**Total** 20015

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	98	0
RDT&E Articles (Quantity)	0	0	0

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>
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**FY 2004 Planned Program:**

- 98 SBIR - Small Business Innovative Research

**Total**      98

<b>C. <u>Other Program Funding Summary:</u></b>								<u>To Compl</u>	<u>Total Cost</u>
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	<u>FY 2003</u> 42717	<u>FY 2004</u> 62629	<u>FY 2005</u> 80789	<u>FY 2006</u> 56623	<u>FY 2007</u> 57272	<u>FY 2008</u> 60695	<u>FY 2009</u> 59478	Cont	Cont

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>

**D. Acquisition Strategy:**

CRP                      The Critical Reagents Program (CRP) is a consolidation of all antibody/antigen 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 program 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 FY04-09 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 manufacturer. The HHA production was awarded 2QFY03. 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. New DNA-based detection methods such as polymerase chain reaction (PCR) were supported as of FY03. Expansion of Gold Standard Reference Panels in support of ongoing detection reagent validation will be a major focus between FY04 and FY10.

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JBAIDS	<p>JBAIDS is an evolutionary development program. Block I development effort focuses on militarizing and hardening of critical identification technologies based on a commercial off-the-shelf (COTS) item (Idaho Technology's Light Cyclor system). This 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. FDA clearance for the initial set of gene probes and primers and hardware will be coordinated. Blocks II and III will focus on the automation of the sample preparation process, inclusion of new technologies for toxin identification, reductions in size, weight and reliability, and obtaining FDA clearance for all remaining gene probe and primer sets.</p>	
VAC SPX	<p>The original acquisition strategy assumed that successful advanced development and FDA licensure of biological defense (BD) vaccines would be achieved by a prime contractor who 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. A prime systems contract was awarded in Nov 97 for the development and production of the smallpox vaccine as well as other BW vaccines. Recent events modified of the original strategy: 1) the 11 Sep 01 attacks; 2) the increase in stockpile requirements from 300,000 to 12,000,000 doses of vaccine; and 3) competing efforts by the Department of Health and Human Services (DHHS) to develop, produce, and license a smallpox vaccine. Further development of the DoD vaccine will be terminated due to lack of funding to support program cost increases. Procurement funding is planned for FY06 to procure a licensed Smallpox vaccine commercially.</p>	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
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<p>Vaccinia Immune Globulin, intravenous (VIGIV) is a key performance parameter of the smallpox vaccine. Whether the smallpox vaccine is manufactured by a prime systems contractor or procured from another source, a stockpile of 3000 TEDs of VIGIV is required to remediate serious complications of smallpox vaccination. The Biologics License Application for VIGIV is on track for submission by 3QFY04.</p>		

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
HW C - Reagent Technology	MIPR	USAMRIID, Fort Detrick, MD	U	0	0	NONE	600	2Q FY04	546	1Q FY05	0	1146	0
HW C - Assay and Reagent Technology and Infectious Disease	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	205	2Q FY04	130	1Q FY05	0	335	0
SW SB - Large Animal Farm	MIPR	USAMRIID Vet Sci Division, Fort Detrick, MD	U	0	0	NONE	153	2Q FY04	123	1Q FY05	0	276	0
HW C - Enhance Lab Processes and Operations	C/CPFF	TBS	C	0	0	NONE	500	2Q FY04	0	NONE	0	500	0
JBAIDS													
SW SB - Hardware (HW) & Assay Development, HW Testing & Upgrades	C/FFP	Idaho Technology, Inc., Salt Lake City, UT	C	0	9252	4Q FY03	0	NONE	3273	2Q FY05	0	12525	0
VAC SPX													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	9854	1Q FY03	0	NONE	0	NONE	0	9854	0
Subtotal I. Product Development:				0	19106		1458		4072		0	24636	

Remarks:

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CRP</b>													
TD/D C - Repository and Conformance Lab	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	0	NONE	217	3Q FY04	689	2Q FY05	0	906	0
TD/D C - Critical Antigen Repository	MIPR	Dugway Proving Ground, Dugway, UT	U	0	0	NONE	0	NONE	345	2Q FY05	0	345	0
TD/D C - CRP Proficiency Program	C/CPFF	TBS	C	0	0	NONE	0	NONE	465	2Q FY05	0	465	0
<b>JBAIDS</b>													
TD/D C - Joint Services Training	MIPR	AMEDD, Fort Sam Houston, TX	U	0	120	2Q FY03	200	3Q FY04	0	NONE	0	320	0
TD/D C - Government Labs Support	MIPR	Various		0	467	2Q FY03	150	2Q FY04	0	NONE	0	617	0
TD/D C - 510(k) Package, Test Plans, Technical Data/Manuals, Assay Patents	C/FFP	Idaho Technology, Inc., Salt Lake City, UT		0	1119	4Q FY03	0	NONE	0	NONE	0	1119	0
<b>VAC SPX</b>													
TD/D SB - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	501	1Q FY03	0	NONE	0	NONE	0	501	0
<b>Subtotal II. Support Costs:</b>				0	2207		567		1499		0	4273	

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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II. Support Costs - Cont.  
 Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>CRP</b>													
DTE C - Assay and Reagent Technology	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	264	2Q FY04	120	1Q FY05	0	384	0
OTHT C - Large Animal Farm	MIPR	USAMRIID Vet Sci Division, Frederick, MD	U	0	0	NONE	155	2Q FY04	122	1Q FY05	0	277	0
OTHT C - BSL3 Antigen Lab	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	0	NONE	396	3Q FY04	207	1Q FY05	0	603	0
OTHT C - PCR Assay Assessments	MIPR	Armed Forces Institute of Pathology, Washington, DC	U	0	0	NONE	128	3Q FY04	0	NONE	0	128	0
<b>JBAIDS</b>													
DTE SB - DT and OT Efforts	MIPR	Various	U	0	616	2Q FY04	587	2Q FY04	0	NONE	0	1203	0
DTE SB - DT and OT Efforts	MIPR	AFOTEC, Kirtland AFB, NM	U	0	225	2Q FY03	900	2Q FY04	974	2Q FY05	0	2099	0
DTE SB - R&D of Testing Protocols to Execute Block I	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	450	3Q FY03	328	2Q FY04	0	NONE	0	778	0



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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
PM/MS S - Program Management Support	C/CPFF	TBS	C	0	0	NONE	672	3Q FY04	71	1Q FY05	0	743	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	187	3Q FY04	185	4Q FY05	0	372	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	0	NONE	63	2Q FY04	93	4Q FY05	0	156	0
JBAIDS													
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	38	2Q FY03	0	NONE	0	NONE	0	38	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Falls Church, VA	C	0	1348	2Q FY03	901	2Q FY04	0	NONE	0	2249	0
PM/MS SB - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	138	3Q FY03	39	4Q FY04	13	2Q FY05	0	190	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	139	2Q FY03	39	4Q FY04	104	2Q FY05	0	282	0
PM/MS S - Program Management Support	C/CPFF	TBS	C	0	0	NONE	482	3Q FY04	350	2Q FY05	0	832	0
PM/MS S - Source Selection	Allot	CBMS, Frederick, MD	U	0	892	1Q FY03	0	NONE	0	NONE	0	892	0
VAC SPX													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	464	3Q FY03	0	NONE	0	NONE	0	464	0

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	JPEO, Falls Church, VA	U	0	469	2Q FY03	0	NONE	0	NONE	0	469	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	366	2Q FY03	0	NONE	0	NONE	0	366	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	128	2Q FY03	0	NONE	0	NONE	0	128	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1022	2Q FY03	0	NONE	0	NONE	0	1022	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	98	NONE	0	NONE	0	98	0
Subtotal IV. Management Services:				0	5004		2481		816		0	8301	

Remarks:

Project MB5



<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MB5</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009								
	1	2	3	4	1	2	3	4	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																																					
International Task Force (ITF)-6A List Complete	>>			4Q																																	
DNA and Select Agent Panels for Ten Threat Agents				4Q	—————												4Q																				
DNA Efforts to ITF-6A and ITF-6B								4Q	—————												4Q																
Upgrade Antibodies for ITF-6A												2Q	—————												1Q												
ITF-6B List Complete												2Q	—————												4Q												
ITF-6C List Complete																				1Q	—————												4Q				
JBAIDS																																					
Advanced Concept Technology Demonstration (ACTD)				3Q 4Q																																	
Request for Proposal (RFP) Release (Source Selection)								2Q	—————												4Q																
Milestone B								4Q																													
Procure Systems for Engineering Design Test (EDT)/Developmental Test (DT)												2Q																									
Engineering Design and Test (EDT)/Developmental Test (DT)												2Q	—————												4Q												

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MB5</b>
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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)																																
Milestone C/Low Rate Initial Production (LRIP) Decision												4Q																				
Initial Operational Test and Evaluation (IOT&E)													1Q																			
Full Rate Production (FRP) Decision																3Q																
VAC SPX																																
VIG-Clinical Trials								4Q	1Q																							
VIG-Biological Licensure Application (BLA) Submission												3Q	————— 4Q																			
VIG-FDA Licensure/Full Rate Production In Process Review (IPR)																																

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MC5</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1778	1439	1423	7163	7199	7555	6269	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 post approval studies for Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP) used as a pretreatment against nerve agent poisoning; Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), which is a topical skin protectant; and Antidote Treatment, Nerve Agent, Autoinjector (ATNAA), which is a multi-chambered autoinjector for delivery of atropine and an oxime.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MEDICAL CHEMICAL DEFENSE	1778	1407	1423
RDT&E Articles (Quantity)	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MC5</b>

**FY 2003 Accomplishments:**

- 350 SNAPP - Received FDA approval of New Drug Application (NDA) for use of pyridostigmine bromide against soman.
- 479 SERPACWA - Continued FDA manufacturing requirements, production line process validation, self-life monitoring, and initiated field trial.
- 434 ATNAA - Continued shelf-life extension stability studies required by the FDA.
- 515 SNAPP - Initiated ex vivo human muscle and non-human primate studies to demonstrate efficacy vs. surrogate markers.

**Total** 1778

**FY 2004 Planned Program:**

- 313 SERPACWA - Continue FDA manufacturing requirements, redesign packaging, production line process validation, shelf-life monitoring, and complete field trial.
- 382 ATNAA - Continue shelf-life extension stability studies required by the FDA.
- 712 SNAPP - Continue ex vivo human muscle and non-human primate studies to demonstrate efficacy vs. surrogate markers.

**Total** 1407

**FY 2005 Planned Program:**

- 895 SNAPP - Continue ex vivo human muscle and non-human primate studies to demonstrate efficacy vs. surrogate markers.
- 378 ATNAA - Complete shelf-life extension stability studies required by the FDA.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MC5</b>
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**FY 2005 Planned Program (Cont):**

- 150 SERPACWA - Complete FDA manufacturing requirements, redesign packaging, production line process validation, and shelf-life monitoring.

**Total** 1423

	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
SBIR/STTR	0	32	0
RDT&E Articles (Quantity)	0	0	0

**FY 2004 Planned Program:**

- 32 SBIR - Small Business Innovative Research

**Total** 32

**C. Other Program Funding Summary: N/A**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MC5</b>

**D. Acquisition Strategy:**

MEDCHEM

These Advanced Component Development and Prototypes (ACD&P) and System Development and Demonstration (SDD) efforts are designed to develop, license, and field prophylactic and therapeutic drugs, diagnostic equipment, and other life support equipment for protection against and management of chemical warfare agent intoxication. Non-traditional medical countermeasure efforts will include a chemical agent facility, which will test and evaluate medical chemical defense products under Good Laboratory Practices (GLP). The current acquisition strategy of in-house development and the use of prime contractors will be continued for the development of the Advanced Anticonvulsant System (AAS) and Next Generation Oxime (NGO). Although Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA), Antidote Treatment - Nerve Agent, Autoinjector (ATNAA), and Soman Nerve Agent Pyridostigmine Pretreatment (SNAPP) have been approved by the FDA, additional post marketing studies were imposed by the FDA and will be completed within the next several years. New indications for Pyridostigmine Bromide (PB) will be integrated with current therapeutic regimens. In FY04, SERPACWA will transition to Defense Supply Center Philadelphia for follow-on procurement.





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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA5 - System Development and Demonstration (SDD)</b>	<b>PE NUMBER AND TITLE</b> <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	<b>PROJECT</b> <b>MC5</b>
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>MEDCHEM</b>													
OTHT S - SERPACWA FDA Required Study	MIPR	USAMRICD, Edgewood, MD	U	0	16	2Q FY03	0	NONE	0	NONE	0	16	0
DTE C - SERPACWA Durability Study	MIPR	Aberdeen Proving Ground, Edgewood, MD	U	0	71	2Q FY03	0	NONE	0	NONE	0	71	0
DTE C - SERPACWA Stability Testing	C/FFP	McKesson BioServices, Rockville, MD	C	0	0	NONE	45	2Q FY04	0	NONE	0	45	0
OTHT C - SERPACWA Extended Wear Study	MIPR	USARIEM, Natick, MA	U	0	24	2Q FY03	0	NONE	0	NONE	0	24	0
DTE C - SERPACWA Protective Efficacy Study	MIPR	USAMRAA, Fort Detrick, MD	U	0	134	2Q FY03	0	NONE	0	NONE	0	134	0
DTE C - SERPACWA Extended Wear and Label Evaluation Studies	MIPR	USAMMDA, Fort Detrick, MD	U	0	41	2Q FY03	64	2Q FY04	0	NONE	0	105	0
DTE S - ATNAA Shelf-life Extension Stability Study	MIPR	USAMMDA, Fort Detrick, MD	U	0	350	2Q FY03	237	2Q FY04	324	1Q FY05	0	911	0
OTHT SB - SNAPP Ex Vivo Human Muscle Study	MIPR	WRAIR, Silver Spring, MD	U	0	216	2Q FY03	32	2Q FY04	102	1Q FY05	0	350	0
DTE S - SNAPP Ex Vivo Human Muscle Study	MIPR	USAMRICD, Edgewood, MD	U	0	126	2Q FY03	50	2Q FY04	225	2Q FY05	0	401	0
DTE S - SNAPP FDA Required Studies (incl. Ex Vivo)	MIPR	USAMRAA, Fort Detrick, MD	U	0	333	2Q FY03	216	2Q FY04	225	2Q FY05	0	774	0

Project MC5	Page 177 of 180 Pages	Exhibit R-3 (PE 0604384BP)
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**UNCLASSIFIED**

UNCLASSIFIED

CDBP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2004		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)						PROJECT MC5		
III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE S - SNAPP Support of Animal Studies	MIPR	USAMMDA, Fort Detrick, MD	U	0	45	2Q FY03	208	2Q FY04	209	2Q FY05	0	462	0
Subtotal III. Test and Evaluation:				0	1356		852		1085		0	3293	
Remarks:													
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MEDCHEM													
PM/MS SB - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	18	4Q FY04	17	4Q FY05	0	35	0
PM/MS S - Joint Program Executive Office	Allot	JPEO, Falls Church, VA	U	0	27	2Q FY03	29	4Q FY04	43	4Q FY05	0	99	0
PM/MS S - Program Management Support	C/CPFF	TBS	C	0	0	NONE	315	3Q FY04	32	1Q FY05	0	347	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	0	NONE	32	1Q FY04	0	NONE	0	32	0
Subtotal IV. Management Services:				0	27		394		92		0	513	
Project MC5													



<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/                  BA5 - System Development and Demonstration (SDD)</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)</b>	PROJECT <b>MC5</b>
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IV. Management Services - Cont.  
 Remarks:

TOTAL PROJECT COST:	0	1778		1439		1423		0	4640
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Project MC5

## Exhibit R-4a, Schedule Profile

DATE  
**February 2004**

**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA5 - System Development and Demonstration (SDD)**

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**      **PROJECT**  
**MC5**

<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
SNAPP - Conduct Studies to Support New Drug Application (NDA)	1Q							2Q																								
SNAPP - Approval of New Drug Application (NDA)								2Q																								
SNAPP - FDA Post Approval Studies								2Q																								
SERPACWA - Complete FDA Requirements (Milestone C 4Q FY00)				3Q																												
ATNAA - Shelf-life Extension/Stability Study				2Q																												
ATNAA - Full Rate Production Decision				4Q																												

**BUDGET ACTIVITY 6**  
**RDT&E MGT SUPPORT**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
Total Budget Activity (BA) Cost	48678	38928	42652	47333	45013	40145	37826	Continuing	Continuing
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	39408	38928	42652	47333	45013	40145	37826	Continuing	Continuing
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	9270	0	0	0	0	0	0	0	9270

**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 Point Test program (O49), which provides a response to Combatant Commanders and Services regarding joint tests and research assessments.

Anti-terrorism funding (AT6) provides DoD with a process and means to conduct assessments of installation vulnerabilities to CB threats.

Weapons of Mass Destruction Civil Support Team (WMD-CST) (CM6) provides management funds to execute the Consequence Management Research Development Acquisition (RDA) program.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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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.

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 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 2004**

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 2004**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - RDT&E Mgt Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT  
SUPPORT)**

COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
Total Program Element (PE) Cost	39408	38928	42652	47333	45013	40145	37826	Continuing	Continuing
AT6 ANTI-TERRORISM (RDT&E MGT SUPPORT)	439	452	476	498	507	512	523	Continuing	Continuing
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1520	1558	1568	1555	1552	0	0	0	7753
DT6 JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	5785	5877	3424	5900	6007	4426	4517	Continuing	Continuing
DW6 DUGWAY PROVING GROUND (RDT&E MGT SUPPORT)	14852	16184	16615	17959	18216	18852	19164	Continuing	Continuing
MS6 RDT&E MGT SUPPORT	13973	11951	17644	18510	15828	12983	10151	Continuing	Continuing
O49 JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&	2839	2906	2925	2911	2903	3372	3471	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This program element provides research, development, testing and evaluation management support to the DoD CB defense program.



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

DATE

**February 2004**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - RDT&E Mgt Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT  
SUPPORT)**

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 Point Test program (O49), which provides a response to Combatant Commanders and Services regarding joint tests and research assessments.

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.

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

DATE

**February 2004**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - RDT&E Mgt Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT  
SUPPORT)**

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.

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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT                  SUPPORT)</b>
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<b>B. <u>Program Change Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
Previous President's Budget (FY 2004 PB)	35889	39345	42652
Current Biennial Budget Estimates (FY 2005)	39285	38928	42652
Total Adjustments	3396	-417	0
a. Congressional General Reductions	0	-417	0
b. Congressional Increases	0	0	0
c. Reprogrammings	4103	0	0
d. SBIR/STTR Transfer	-518	0	0
e. Other Adjustments	-66	0	0

**Change Summary Explanation:**

**Funding:** FY03 - Reprogramming to support high priority efforts (+\$4,103K MS6).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) AT6</b>
--	---

COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
AT6 ANTI-TERRORISM (RDT&E MGT SUPPORT)	439	452	476	498	507	512	523	Continuing	Continuing

**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**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ANTI-TERRORISM	439	444	476

**FY 2003 Accomplishments:**

- 439 Performed program management support for Joint Service Installation Protection Program (JSIPP).

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) AT6</b>
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**FY 2003 Accomplishments (Cont):**

**Total**    439

**FY 2004 Planned Program:**

- 444 Develop after action reports for participating installations. Refine fixed site facility biological detection concept of operations (CONOPS) to reduce life cycle costs.

**Total**    444

**FY 2005 Planned Program:**

- 476 Perform analytical support for the JSIPP and perform analysis of standardized test requirements for first responder and civilian protection equipment.

**Total**    476

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	8	0

**FY 2004 Planned Program:**

- 8 SBIR - Small Business Innovative Research

**Total**    8

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
--	------------------------------

BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E CM6          MGT SUPPORT)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM6 HOMELAND DEFENSE (RDT&E MGT SUPPORT)	1520	1558	1568	1555	1552	0	0	0	7753

**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**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	1520	1532	1568

**FY 2003 Accomplishments:**

- 1520 WMD CST- Initiated support planning and oversight efforts to coordinate equipment and operational issues for WMD-CSTs.

**Total** 1520

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) CM6</b>	
<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 474 WMD CST- Integrate test methodology development for CSTs into CBDP Test and Evaluation process. Coordinate with JPEO CBD PM Guardian for equipment, threat and operational issues.</li> <li>• 400 WMD CST - Participate in Requirements Capabilities Assessment Working Group (RCAWG) and support conduct of assessments and validation.</li> <li>• 358 WMD CST - Continue Advanced Concept Technology Demonstration (ACTD) to support system capability transition to CSTs.</li> <li>• 300 WMD CST - Develop transition plan for CBDP capabilities to PM WMD Civil Support Systems (CSS) and JPM Guardian consistent with CST requirements process.</li> </ul> <p><b>Total</b> 1532</p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 468 WMD CST- Continue participation in RCAWG.</li> <li>• 600 WMD CST - Provide technical and operational support for plans. Conduct demonstration and validation exercises for CSTs.</li> <li>• 500 WMD CST - Continue development and validation of test methodologies for transition of equipment to CSTs.</li> </ul> <p><b>Total</b> 1568</p>		
Project CM6/Line No: 120	Page 11 of 41 Pages	Exhibit R-2a (PE 0605384BP)

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

DATE **February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
 BA6 - RDT&E Mgt Support**

PROJECT  
**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E CM6  
 MGT SUPPORT)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	26	0

**FY 2004 Planned Program:**

- 26 SBIR - Small Business Innovative Research

**Total** 26



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DT6</b>
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	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
COST (In Thousands)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
DT6 JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	5785	5877	3424	5900	6007	4426	4517	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**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT REQUIREMENTS OFFICE DOCTRINE AND TRAINING	5785	5778	3424

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DT6</b>	

**FY 2003 Accomplishments:**

- 950 DT - Continued to support the revision and development of CBRN defense medical and non-medical MTTPs. Continued to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 2250 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 United States Coast Guard (USCG).
- 75 DT - Continued to support additional joint participation in the JSLC.
- 2510 DT - Continued analyses to define capability gaps, capability needs and approaches to provide those capabilities within CBRN defense across all DoD mission areas. 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** 5785

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DT6</b>	

**FY 2004 Planned Program:**

- 1000 DT - Continue to support the revision and development of CBRN defense medical and non-medical MTTPs: (1) CBRN Defense Operations; (2) CBRN Defense Aspects of Consequence Management; (3) 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.
- 2189 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. 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. Continue to provide CBRN defense related training support to Combatant Command staffs, services and the USCG.
- 100 DT - Continue to support additional joint participation in the JSLC.
- 2489 DT - Continue analyses to define capability gaps, capability needs and approaches to provide those capabilities within CBRN defense across all DoD mission areas. Initiate 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** 5778

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DT6</b>	

**FY 2005 Planned Program:**

- 800 DT - Continue to support the revision and development of CBRN defense medical and non-medical MTTPs: (1) Potential Military Chemical/Biological Agents and Compounds; (2) CBRN Defense of Theater Fixed Sites, Ports, and Airfields; (3) Treatment of Nuclear and Radiation Casualties. Continue to support the integration of CBRN defense considerations during the revision and development of selected joint doctrine and JTTPs.
- 1750 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.
- 100 DT - Continue to support additional joint participation in the JSLC.
- 774 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** 3424

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

DATE **February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
 BA6 - RDT&E Mgt Support**

PROJECT  
**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E DT6  
 MGT SUPPORT)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	99	0

**FY 2004 Planned Program:**

- 99 SBIR - Small Business Innovative Research

**Total** 99

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2004</b>		
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>				<b>PROJECT</b> <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E DW6 MGT SUPPORT)</b>					
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
DW6 DUGWAY PROVING GROUND (RDT&E MGT SUPPORT)	14852	16184	16615	17959	18216	18852	19164	Continuing	Continuing

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

**Project DW6 DUGWAY PROVING GROUND (RDT&E MGT SUPPORT):** Project provides the technical capability for testing DoD CB defense materiel, equipment, and systems from concept through production. 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.

DPG, a Major Range and Test Facility Base (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 DoDD 3200.11.

DPG uses state-of-the-art chemical and life sciences test facilities and test chambers to perform CB defense testing of protective gear, decontamination systems, detectors, and equipment while totally containing chemical agents and biological pathogens. DPG also provides a fully instrumented outdoor range capability for testing with stimulants that can be correlated to the laboratory testing with live agents.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DW6</b>	
<p>The current level of institutional test operations funding requires that institutional costs continue to be passed to the program managers and acquisition programs. Passing institutional shortfall costs to the test customers will continue to result in increased test costs to an even greater degree than already exists. Increased test costs put critical developmental testing of CBD systems at risk of being deferred or eliminated, creating an overall increased risk for the decision-makers. Failure to fully fund the institutional portion of the developmental test mission results in insufficient developmental testing for system reliability, performance, and safety issues and failures in operational testing. Preservation of critical Test and Evaluation (T&amp;E) workforce and expertise is also at risk.</p> <p>The current level of modernization/revitalization funding at DPG increases the risk that some essential test facilities will not be available when needed to meet CB program test schedules. Readiness and condition of test ranges and laboratory equipment will be inadequate to meet the demand of testing state-of-the-art CBD program systems and supporting technologies. Test customers will be required to redirect program funds to upgrade DPG's test facilities. This redirection of program funds puts critical T&amp;E of CBD systems at risk of being deferred or eliminated creating an overall increased risk to the CBDP. The need to refurbish or modernize a given test fixture or series of instrumentation in a given year results in test schedule slippage to subsequent years, thus impacting acquisition program milestones.</p> <p>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); JSLIST Block II Glove Upgrade; 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); Artemis Chemical Stand-off Detector; Joint Protective Aircrew Ensemble (JPACE); and Joint Biological Stand-off Detection System (JBSDS).</p>		
Project DW6/Line No: 120	Page 19 of 41 Pages	Exhibit R-2a (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E                  MGT SUPPORT) DW6</b>
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**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DUGWAY PROVING GROUND	14852	15910	16615

**FY 2003 Accomplishments:**

- 8476 DPG - Funded 40 percent of the civilian labor costs for United States Army Program Budget Guidance (PBG) authorizations. The balance is reimbursed from test customer funds. These civilian personnel support DPG's CB test mission included budget, surety operations, range control, Contracting Officer Representative (COR) duties, and environmental oversight. This account provided the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment.
- 950 DPG - Funded three percent of targeted 20 percent of contract labor costs. The balance is reimbursed from test customer funds. This is the institutional portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by institutional funds; the balance is recouped from customers.
- 540 DPG - Provided for a dedicated and specially trained staff to operate and maintain all control systems within DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DW6</b>	

**FY 2003 Accomplishments (Cont):**

- 4886 DPG - Provided for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts included: portable BL-3 laboratory; chemical agent protective materials swatch test fixture upgrades; field bio-defense instrumentation modernization; and purchases to upgrade/replace aging equipment and instrumentation.

**Total** 14852

**FY 2004 Planned Program:**

- 10062 DPG - Funding supports 40 percent of the civilian labor costs for Army PBG authorizations. The balance is reimbursed from test customer funds. These civilian personnel support DPG's CB test mission to include budget, surety operations, range control, COR duties, and environmental oversight. This account provides the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment.
- 800 DPG - Funding supports two percent of the targeted 20 percent of contract labor costs. The balance is reimbursed from test customer funds. This is the institutional portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by institutional funds; the balance is recouped from customers.
- 567 DPG - Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) DW6</b>	

**FY 2004 Planned Program (Cont):**

- 4481 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts include decontamination pad replacement chemical and biological simulant characterization, chemical and biological laboratory equipment modernization, and purchases to upgrade/replace aging equipment and instrumentation.

**Total** 15910

**FY 2005 Planned Program:**

- 10393 DPG - Funding supports 40 percent of the civilian labor costs for Army PBG authorizations. The balance is reimbursed from test customer funds. These civilian personnel support DPG's CB test mission to include budget, surety operations, range control, COR duties, and environmental oversight. This account provides the sustaining base for this Nation's highest level of expertise in the area of testing CB defense technologies and equipment.
- 700 DPG - Funding supports two percent of the targeted 20 percent of contract labor costs. The balance is reimbursed from test customer funds. This is the institutional portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by institutional funds; the balance is recouped from customers.
- 595 DPG - Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility complex.

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E                  MGT SUPPORT) DW6</b>
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**FY 2005 Planned Program (Cont):**

- 4927 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts include: chemical protective mask test fixture upgrades; chamber agent monitoring methodology developments; Polymerase Chain Reaction analysis improvements; and purchases to upgrade/replace aging equipment and instrumentation.

**Total** 16615

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	274	0

**FY 2004 Planned Program:**

- 274 SBIR - Small Business Innovative Research

**Total** 274

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>					<b>PROJECT</b> <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MS6 MGT SUPPORT)</b>				
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
MS6 RDT&E MGT SUPPORT	13973	11951	17644	18510	15828	12983	10151	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).

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>	

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 IPT, which serves as a mechanism to identify, develop, and manage test infrastructure and technology programs to support Developmental Testing (DT) and Operational Testing (OT) of DoD CBD systems, as outlined in the RDA Plan. The T&E Executive will fund a series of methodology, instrumentation, and associated validation efforts to provide test infrastructure and technologies for testing RDA systems needed to support all services.

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). 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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CHEM BIO ARCHIVE INFORMATION MGT SYS	331	238	242

**FY 2003 Accomplishments:**

- 331 CBAIMS - Archived Chemical and Biological information from multiple service locations.

**Total** 331

**FY 2004 Planned Program:**

- 238 CBAIMS - Archive Chemical and Biological information from multiple service locations.

**Total** 238

**FY 2005 Planned Program:**

- 242 CBAIMS - Archive Chemical and Biological information from multiple service locations

**Total** 242

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT NBC DEFENSE BOARD MGT	184	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**FY 2003 Accomplishments:**

- 184 Army Executive MGT - Provided oversight and analysis for the PPBES process.

**Total** 184

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT REQUIRMENTS OFFICE (JRO) MANAGEMENT	0	2545	4637

**FY 2004 Planned Program:**

- 2545 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 non-medical CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities, and the CBD Annual Report to Congress.

**Total** 2545

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**FY 2005 Planned Program:**

- 4637 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 non-medical CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities, and the CBD Annual Report to Congress.

**Total** 4637

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT SERVICE INTEGRATION GROUP MGMT	2536	0	0

**FY 2003 Accomplishments:**

- 2536 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 the: Joint Enabling Concept for CBRN Defense; Joint CBRN defense capability requirements; DoD CBDP program guidance; Joint CBRN Defense Modernization Plan; Integrated medical and non-medical CBRN Defense JPL; CBRN Defense Joint Future Operational Capabilities, and the CBD Annual Report to Congress.

**Total** 2536



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT SERVICE MATERIEL GROUP MGMT	3526	0	0

**FY 2003 Accomplishments:**

- 3526 JSMG MGT- Developed assessments to support RDA Planning. Provided analytic programmatic support for development of program guidance, the Budget Estimate Submission, and the President's Budget (PB) submission. Responded to specialized evaluation studies throughout the Planning, Programming, Budgeting and Execution process. Provided management of JSCBIS.

**Total** 3526

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT TEST INFRASTRUCTURE WORKING GROUP	0	1913	4378

**FY 2004 Planned Program:**

- 1913 JTIWG - Initiate and conduct test methodology development, test system instrumentation integration, and test technology validation for refereeing agent simulant challenges for field testing (developmental and operational).

**Total** 1913

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**FY 2005 Planned Program:**

- 4378 JTIWG - Continue methodology development, test system instrumentation integration, and test technology validation for refereeing agent simulat challenges for field testing (developmental and operational). Refine methodology for data fusion and visualization. Procure additional ground truth instrumentation and initiate mobile capability.

**Total** 4378

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
OFFICE SECRETARY OF DEFENSE MGMT	7396	2209	3318

**FY 2003 Accomplishments:**

- 7396 OSD MGT - Performed program reviews/assessments, provided programmatic Planning, Programming, Budgeting and Execution (PPBE) oversight/analysis, provided congressional issue analysis and support. Supported financial management services provided by the DTRA such as funding distribution and execution reporting. Provided JSCBIS database support.

**Total** 7396

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**FY 2004 Planned Program:**

- 2209 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; quarterly financial statements and annual audits; and execution reporting. Provide JSCBIS database support.

**Total** 2209

**FY 2005 Planned Program:**

- 3318 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** 3318

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
PROGRAM ANALYSIS AND INTEGRATION OFFICE (PAIO) MGT	0	4844	5069

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) MS6</b>
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**FY 2004 Planned Program:**

- 4844 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 President's Budget (PB) submissions. Respond to specialized evaluation studies throughout the Planning, Programming, Budgeting and Execution (PPBE) process. Provide JSCBIS database management.

**Total** 4844

**FY 2005 Planned Program:**

- 5069 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** 5069

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	202	0

**FY 2004 Planned Program:**

- 202 SBIR - Small Business Innovative Research

**Total** 202

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) O49</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
O49 JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM (RDT&	2839	2906	2925	2911	2903	3372	3471	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**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM	2839	2857	2925

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) O49</b>	
<p><b>FY 2003 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1385 JCDE - Conducted field trials to evaluate performance and procedures in a chemical environment. Conducted field trials in support of operations: (1) determination of chemical droplet size, and (2) processing cargo and troops through an exchange zone (Phases I, II, and III).</li> <li>• 1184 JCDE - Conducted assessments to evaluate performance and procedures in a chemical environment. Conducted assessments of the effectiveness of interior building areas for use as chemical rest and relief areas.</li> <li>• 150 JCDE - Conducted CB Joint Technical Information Center Research. Conducted the following as necessary: Initial Evaluation, Literature Search, or a letter response with the results of the evaluation. Conducted further assessment to determine appropriate test methodology such as modeling, field test, laboratory test, and/or chamber test.</li> <li>• 120 JCDE - Continued to conduct Technical Data Source Book update. Continued incremental update of data and information generated from on going Project O49 activity.</li> </ul> <p><b>Total</b> 2839</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1569 JCDE - Conduct warfighting experiments, assessments, laboratory and field tests to evaluate performance and procedures in a chemical and biological environment in support of information requirements submitted by Combatant Commanders and Service representatives.</li> <li>• 330 JCDE - Conduct field tests to evaluate performance and procedures in a chemical environment, such as, the effectiveness of over pressurizing the C-17 cargo aircraft to prevent internal contamination.</li> </ul>		
Project O49/Line No: 120	Page 34 of 41 Pages	Exhibit R-2a (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&amp;E MGT SUPPORT) O49</b>	

**FY 2004 Planned Program (Cont):**

- 360 JCDE - Conduct field tests to evaluate performance and procedures for processing cargo and personnel through an exchange zone (Phase IV).
- 460 JCDE - Conduct laboratory and field tests to develop operational parameters for use of Joint Service Lightweight Integrated Suit Technology (JSLIST) in elevated wind conditions.
- 138 JCDE - Continue to conduct Technical Data Source Book updates by reviewing the literature and updating volumes of the source books with newly published material.

**Total** 2857

**FY 2005 Planned Program:**

- 900 JCDE - Conduct assessments, laboratory and field tests to evaluate performance and procedures in a chemical and biological environment in support of information requirements submitted by Combatant Commanders and Service representatives.
- 125 JCDE - Continue to conduct Technical Data Source Book updates by reviewing the literature and updating volumes of the source books with newly published material.
- 1900 JCDE - Conduct a Joint Warfighter Experiment that addresses Concept of Operations (CONOPS) issues relating to Battlefield Space Awareness.

**Total** 2925

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

DATE **February 2004**

BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
 BA6 - RDT&E Mgt Support**

PROJECT  
**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E O49  
 MGT SUPPORT)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	49	0

**FY 2004 Planned Program:**

- 49 SBIR - Small Business Innovative Research

**Total** 49



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	<b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9270	0	0	0	0	0	0	0	9270
SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	9270	0	0	0	0	0	0	0	9270

**A. Mission Description and Budget Item Justification:** The overall objective of the CBD SBIR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	<b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</b>
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<b>B. <u>Program Change Summary:</u></b>		<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget (FY 2004 PB)		0	0	0
Current Biennial Budget Estimates (FY 2005)		9270	0	0
Total Adjustments		9270	0	0
a. Congressional General Reductions		0	0	0
b. Congressional Increases		0	0	0
c. Reprogrammings		0	0	0
d. SBIR/STTR Transfer		9270	0	0
e. Other Adjustments		0	0	0

**Change Summary Explanation:**

**Funding:** FY03 - Funding transferred and applied to SBIR program (+\$9,270K SB6).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH SB6                  (SBIR)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	9270	0	0	0	0	0	0	0	9270

**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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2004</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - RDT&amp;E Mgt Support</b>	<b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</b>	PROJECT <b>SB6</b>
<p>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&amp;D budget vs. 2.5% for the SBIR Program).</p> <p>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.</p> <p>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.</p>		
Project SB6/Line No: 120	Page 40 of 41 Pages	Exhibit R-2a (PE 0605502BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA6 - RDT&amp;E Mgt Support</b>	PROJECT <b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH SB6                  (SBIR)</b>
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**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	9270	0	0

**FY 2003 Accomplishments:**

- 9270 Conducted Chemical and Biological Defense SBIR research and development efforts.

**Total** 9270

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**BUDGET ACTIVITY 7**  
**OPERATIONAL SYSTEMS DEVELOPMENT**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	2178	1944	0	0	0	0	4122
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	2178	1944	0	0	0	0	4122

**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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</b>
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<b>B. <u>Program Change Summary:</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
Previous President's Budget (FY 2004 PB)	0	3442	3428
Current Biennial Budget Estimates (FY 2005)	0	0	2178
Total Adjustments	0	-3442	-1250
a. Congressional General Reductions	0	0	0
b. Congressional Increases	0	-3342	0
c. Reprogrammings	0	0	0
d. SBIR/STTR Transfer	0	0	0
e. Other Adjustments	0	0	-1250

**Change Summary Explanation:**

**Funding:** FY04 - Congressional adjustment CBD (-\$3,342 CA7).

FY05 - Funding moved to support higher priority efforts (-\$1,250).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS                  DEV)</b>	PROJECT <b>CA7</b>
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COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	2178	1944	0	0	0	0	4122

**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.

These upgrades support the contamination avoidance tenet of the Chemical Biological Defense Program. Efforts in this project support the upgrade of fielded detectors against emerging chemical threat agents and Toxic Industrial Chemicals.

**B. Accomplishments/Planned Program**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DETECTOR MODS	0	0	2178

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</b> PROJECT <b>CA7</b>
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**FY 2005 Planned Program:**

- 2178 DETECTMOD - Initiate evaluations of existing and fielded NBC detectors to detect emerging and changing threats.

**Total** 2178

**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).

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/          BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS          DEV)</b>	PROJECT <b>CA7</b>
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2003 Cost	FY2003 Award Date	FY2004 Cost	FY2004 Award Date	FY2005 Cost	FY2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DETECTMOD													
Evaluate Existing NBC detectors.	PO	JPM NBC CA & RDECOM, APG, MD	U	0	0	NONE	0	NONE	2178	1Q FY05	1949	4127	0
Subtotal I. Product Development:				0	0		0		2178		1949	4127	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

TOTAL PROJECT COST:	0	0	0	2178	1949	4127
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<h2>Exhibit R-4a, Schedule Profile</h2>	DATE <b>February 2004</b>
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/                  BA7 - Operational Systems Development</b>	PE NUMBER AND TITLE <b>0607384BP CHEMICAL/BIOLOGICAL DEFENSE (OP SYS                  DEV)</b>	PROJECT <b>CA7</b>
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<b>D. <u>Schedule Profile:</u></b>	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	1	2	3	4	1	2	3	4	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																																
Initiate Evaluation of Fielded Detectors													1Q			4Q																

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