

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

**RDT&E Descriptive Summaries for  
Fiscal Year (FY) 2004/FY 2005 Biennial Budget  
Estimates  
RDT&E, Defense-Wide**



**February 2003**



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**Fiscal Year (FY) 2004/FY 2005 Biennial Budget Estimates**

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## Department of Defense Chemical/Biological Defense Program Overview

### Fiscal Year (FY) 2004/FY 2005 Biennial 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 fourth generation 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 FY04, 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 Automated Genetic Identification, Standoff Biological Aerosol Detection, Detection of CB Contamination on Surfaces, Self-Detoxifying Materials for CB Protective Clothing, Advanced CB Hazard Predication Modeling, Alternative Delivery Methods for Recombinant Protein Vaccines, advanced medical CB prophylaxes, smallpox therapeutics, and advanced decontamination capabilities.**

**Technologies currently in advanced development (Budget Activities 4 and 5) provide leading edge technologies 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 FY04 include: Artemis and the Joint Service Lightweight Chemical Agent Detector (JSLSCAD) for standoff chemical agent detection, the Joint Chemical Agent Detector (JCAD), the Joint Effects Model (JEM) and the Joint Operational Effects Federation (JOEF) to provide a risk management tool to the warfighter, Advanced Concept Technology Demonstrations (ACTDs) to demonstrate CB defense capabilities at fixed sites (Restoration of Operations ACTD and Contamination Avoidance at Sea Ports of Debarkation ACTD), Joint Service Family of Decontamination Systems (JSFDS), Joint Service Sensitive Equipment Decontamination (JSSED), Advanced Anti-Convulsants and Advanced Pyridostigmine Bromide for nerve agent therapy, biological defense vaccines (including recombinant botulinal toxin vaccine, equine encephalitis vaccine, next generation anthrax 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 FY04, the CDBP 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 FY04 include JSGPM, JWARN Block I, and JBAIDS. Continuing procurement includes the 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 DryVax Smallpox vaccine), the Modular Decontamination System, and the CB Protective System (CBPS).**

**In addition to efforts described above, the CDBP 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 FY04 increment to support additional procurement of CB defense equipment for force installation protection is \$78 million.**

**The FY04 program continues to support the consequence management (CM) mission. CM projects fund the development of the Unified Command Suite (UCS) and Analytical Laboratory System (ALS) Block upgrades. CM funding provides for the modernization to address objective operational capabilities for the National Guard WMD Civil Support Teams (CSTs), the Reserve Component (RC) Reconnaissance, and RC Decontamination Teams. It provides full funding for: (1) type-classified protection, detection, and training equipment; (2) development and fielding of upgraded analytical platforms for the detection, identification, and characterization of chemical, biological, and radiological agents used by terrorists in a civilian environment; (3) development and fielding of communication capabilities that are interoperable with other- federal, state, and local agencies; (4) testing and evaluation to ensure that the systems fielded are safe and effective; and (5) program management funds.**

**Overall, the FY 2004 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.**

**Chemical and Biological Defense Program  
Fiscal Year (FY) 2004/FY 2005 Biennial Budget Estimates**

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

**Date: February 2003**

Line No	Program Number	Item	Budget Activity	Thousands of Dollars			
				FY 2002	FY 2003	FY 2004	FY 2005
008	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	43,986	54,829	35,831	36,769
		<b>Basic Research</b>		<b>43,986</b>	<b>54,829</b>	<b>35,831</b>	<b>36,769</b>
017	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	145,706	173,362	106,451	104,385
		<b>Applied Research</b>		<b>145,706</b>	<b>173,362</b>	<b>106,451</b>	<b>104,385</b>
037	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD)	3	80,198	107,763	103,725	98,843
		<b>Advanced Technology Development (ATD)</b>		<b>80,198</b>	<b>107,763</b>	<b>103,725</b>	<b>98,843</b>
076	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	4	122,210	89,925	162,142	79,195
		<b>Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>122,210</b>	<b>89,925</b>	<b>162,142</b>	<b>79,195</b>
083	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (SDD)	5	168,081	172,262	148,017	83,325
		<b>System Development and Demonstration (SDD)</b>		<b>168,081</b>	<b>172,262</b>	<b>148,017</b>	<b>83,325</b>
111	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	6	34,091	35,889	39,345	42,652
111	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	9,300	0	0	0
		<b>RDT&amp;E Mgt Support</b>		<b>43,391</b>	<b>35,889</b>	<b>39,345</b>	<b>42,652</b>
000	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	7	0	0	3,442	3,428
		<b>Operational Systems Development</b>		<b>0</b>	<b>0</b>	<b>3,442</b>	<b>3,428</b>
<b>Total Chemical and Biological Defense Program</b>				<b>603,572</b>	<b>634,030</b>	<b>598,953</b>	<b>448,597</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 2003</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 2002 Actual	FY 2003 Estimate	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	43986	54829	35831	36769	37946	41001	43863	42341	Continuing	Continuing
CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	10648	18618	6338	6413	7601	10476	10620	10818	Continuing	Continuing
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	23637	27983	20119	20728	19703	19819	22390	20467	Continuing	Continuing
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	9701	8228	9374	9628	10642	10706	10853	11056	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.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
BA1 - Basic Research**

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

Research areas are 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.

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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>	<b><u>FY 2002</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 2003 PB)	45791	64119	36434	37540
Current Biennial Budget Estimates (FY 2004/2005)	43986	54829	35831	36769
Total Adjustments	-1805	-9290	-603	-771
a. Congressional General Reductions	0	-25000	0	0
b. Congressional Increases	0	17500	0	0
c. Reprogrammings	1030	0	0	0
d. SBIR/STTR Transfer	-775	0	0	0
e. Other Adjustments	0	-1790	-603	-771

**Change Summary Explanation:**

**Funding:** FY03 - Transfer to the Department of Homeland Security Bioterrorism initiatives (-\$25,000K HS1) .

FY03 - Adjustment for CBD (+\$12,500K CB1; +\$5,000K TB1).

**Schedule:**

**Technical:**

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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 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	10648	18618	6338	6413	7601	10476	10620	10818	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 compounds.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	3699	3550	3434	3412

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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>
<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>3699 Point and Standoff Detection - Completed electromagnetic scattering for particle identification. Initiated effort to use modified chemresistor for chemical warfare (CW) agent detection. Completed evaluations of imprinted polymers for molecular recognition. Completed DNA-based biorecognition studies. Initiated investigation using neurons to detect presence of toxic agents. Initiated effort to isolate and identify biological weapon (BW) agents in fluid streams using light pressure. Initiated studies to measure rotational and transitional diffusion rates by Nuclear Magnetic Resonance (NMR) spectroscopy. Initiated investigations of methodology to identify CW agents and degradation products.</li> </ul> <p><b>Total 3699</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>3550 Point and Standoff Detection - Continue investigation using neurons to detect presence of toxic agents. Continue effort to isolate and identify BW agents in fluid streams using light pressure. Complete studies to measure rotational and transitional diffusion rates by NMR spectroscopy. Initiate effort to identify biological agents using channel-based sensors. Initiate effort to identify biological agents using linear magnetic trappings. Initiate effort to investigate advanced spectroscopies and signal processing for CW agent identification. Initiate effort to assess utility of micro channel mixing for BW agent processing and detection. Initiate effort to determine enhancement of cavitands couple with liquid crystals for CW agent detection. Initiate efforts to assess utility of advanced (2-D) NMR for macromolecular structure determination and analysis of difficult samples. Initiate effort to determine if dioxiranes are suitable for gas and liquid phase decontamination applications.</li> </ul> <p><b>Total 3550</b></p>		
Project CB1/Line No: 008	Page 5 of 33 Pages	Exhibit R-2a (PE 0601384BP)

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<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>3434 Point and Standoff Detection - Complete investigation using neurons to detect presence of toxic agents. Complete effort to isolate and identify BW agents in fluid streams using light pressure. Continue effort to identify biological agents using channel-based sensors. Continue effort to identify biological agents using linear magnetic trapping. Continue effort to investigate advanced spectroscopies and signal processing for CW agent identification. Continue effort to assess utility of micro channel mixing for BW agent processing and detection. Continue effort to determine enhancement of cavitands couple with liquid crystals for CW agent detection. Continue efforts to assess utility of advanced (2-D) NMR for macromolecular structure determination and analysis of difficult samples. Initiate novel research efforts with potential for CB advanced agent detection capability. Initiate novel research efforts with potential for advanced agent individual or collective protection capability.</li> </ul> <p><b>Total</b> 3434</p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>3412 Point and Standoff Detection - Complete effort to identify biological agents using channel-based sensors. Complete effort to identify biological agents using linear magnetic trapping. Complete effort to investigate advanced spectroscopies and signal processing for CW agent identification. Complete effort to assess utility of micro channel mixing for BW agent processing and detection. Complete effort to determine enhancement of cavitands couple with liquid crystals for CW agent detection. Complete efforts to assess utility of advanced (2-D) NMR for macromolecular structure determination and analysis of difficult samples. Complete effort to evaluate efficacy of artificial nucleases for decontamination of BW and mid-spectrum agents. Continue novel research efforts with potential for CB advanced agent detection capability.</li> </ul> <p><b>Total</b> 3412</p>		
Project CB1/Line No: 008	Page 6 of 33 Pages	Exhibit R-2a (PE 0601384BP)

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	772	600	611	630

**FY 2002 Accomplishments:**

- 772 Collective and Individual Protection - Initiated effort to investigate use of self-assembled monolayer materials for protective barriers. Completed fundamental study of filtration performance and modeling.

**Total** 772

**FY 2003 Planned Program:**

- 600 Collective and Individual Protection - Continue effort to investigate use of self-assembled monolayer materials for protective barriers. Initiate effort to assess protection enhancement of fabrics using patterned electrospray. Initiate effort to determine fate of CW agents adsorbed onto reactive media.

**Total** 600

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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:**

- 611 Collective and Individual Protection - Conduct effort to investigate use of self-assembled monolayer materials for protective barriers. Complete investigations of methodology to identify CW agents and degradation products. Continue effort to assess protection enhancement of fabrics using patterned electrospray. Continue effort to determine fate of CW agents adsorbed onto reactive media.

**Total**     611

**FY 2005 Planned Program:**

- 630 Collective and Individual Protection - Complete effort to assess protection enhancement of fabrics using patterned electrospray. Conduct novel research efforts with potential for advanced agent individual or collective protection capability. Complete effort to determine fate of CW agents adsorbed onto reactive media. Initiate novel research efforts with potential for advanced agent individual or collective protection capability.

**Total**     630

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	842	1351	1522	1567

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>842 Decontamination - Completed investigations of peroxide activation to develop more effective and environmentally benign CB agent decontamination materials. Continued investigations of solvent effects for sub-surface decontamination of CW agents.</li> </ul> <p><b>Total</b> 842</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>1351 Decontamination - Initiate effort to determine if dioxiranes are suitable for gas and liquid phase decontamination applications. Complete studies of solvent effects on decon efficacy.</li> </ul> <p><b>Total</b> 1351</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>1522 Decontamination - Continue effort to determine if dioxiranes are suitable for gas and liquid phase decontamination applications. Continue effort to evaluate efficacy of artificial nucleases for decontamination of BW and mid-spectrum agents. Initiate novel research efforts with potential for advanced agent decontamination capability.</li> </ul> <p><b>Total</b> 1522</p>		
Project CB1/Line No: 008	Page 9 of 33 Pages	Exhibit R-2a (PE 0601384BP)

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**FY 2005 Planned Program:**

- 1567 Decontamination - Complete effort to determine if dioxiranes are suitable for gas and liquid phase decontamination applications. Complete effort to evaluate efficacy of artificial nucleases for decontamination of BW and mid-spectrum agents. Continue novel research efforts with potential for advanced agent decontamination capability.

**Total** 1567

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Supporting Science and Technology	0	350	341	352

**FY 2003 Planned Program:**

- 350 Supporting Science and Technology - Measure the volatility of CW agents in humid environments. Initiate effort to measure volatility of thickened CW agents.

**Total** 350

**FY 2004 Planned Program:**

- 341 Supporting Science and Technology - Complete effort to measure the volatility of volatility of thickened CW agents.

**Total** 341

**FY 2005 Planned Program:**

- 352 Supporting Science and Technology - Initiate project to assess physical properties of prospective CW 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>CB1</b>
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**FY 2005 Planned Program (Cont):**

**Total**     352

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Systems Technology	489	0	430	452

**FY 2002 Accomplishments:**

- 489 CB Planning, Training and Analysis - Initiated simulation hazard modeling for systems and forces via distributed simulations systems. Initiated examination of sensitivity of hazard evolution/prediction models for agent toxicity.

**Total**     489

**FY 2004 Planned Program:**

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

**Total**     430

**FY 2005 Planned Program:**

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

**Total**     452

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Basic Research	4846	12500	0	0

**FY 2002 Accomplishments:**

- 2423 Magnetic Resonance Spectrometer - Purchased a 900 MHz magnetic resonance spectrometer for the New York Structural Biology Center.
- 2423 Lightweight Chemical and Biological Sensors - Completed the final phase of prototype testing of a sensor platform using Surface Acoustic Wave (SAW) and Semi-conducting Metal Oxides (SMO) devices for the detection of CW agents. Initiated a feasibility study to provide biological agent detection capability that may be combined with the chemical sensor. The technology is based on molecular imprinted polymers for biological materials.

**Total** 4846

**FY 2003 Planned Program:**

- 3500 Nanoemulsions for Decontamination - Develop, and validate the efficacy of nanoemulsions for the purpose of decontaminating chemical and biological threat agents.
- 3500 Detection of Chemical and Biological Pollutant Agents in Water - Investigate and develop novel technologies for the detection of chemical and biological threat agents in potable water sources.
- 1000 Chemical Agent Exposure Research - Develop novel approaches to interpreting the consequences of human exposures to chemical threat 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>CB1</b>
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**FY 2003 Planned Program (Cont):**

- 3500 Biological Process Development Facility - Design and develop a facility to evaluate cutting-edge technologies for processing and producing biotechnology reagents applicable to chemical and biological threat agent defense.
- 1000 Agroterrorist Attack Response - Develop novel and innovative response/implementation technologies to enhance multi-agency response to agroterrorist attack.

**Total 12500**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	267	0	0

**FY 2003 Planned Program:**

- 267 SBIR

**Total 267**

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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>		<u>FY 2002</u>	<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>
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)		93534	113169	65872	63494	66507	52915	49249	50169	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)		18531	47349	33414	33027	25908	30903	31328	31914	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)		11791	11075	4714	5257	4575	4122	3196	3255	Cont	Cont

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	23637	27983	20119	20728	19703	19819	22390	20467	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 technologies, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines) and directed research efforts (Anthrax Studies and Engineered Pathogen Identification and Countermeasures Program [formerly Bug to Drug Identification and Countermeasures Program]).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	12553	12842	9134	9411

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**FY 2002 Accomplishments:**

- 1033 Therapeutics, Bacterial - Evaluated therapeutic indices for new (investigational) antibiotic agents identified by in vitro assays in mouse models. Studied the effect of immunomodulators on the host response to Burkholderia mallei (glanders) and Yersinia pestis (plague) candidate vaccines and identified modulators effective in enhancing candidate vaccines. Conducted studies on the effects of established therapeutic compounds on Brucella in vitro.
- 4455 Therapeutics, Toxin - Developed high-throughput, cell-free screening assays for assessment of putative therapeutic inhibitors of several botulinum neurotoxin serotypes. Acquired and evaluated extramural combinatorial libraries of compounds and natural extracts, as well as custom therapeutics as potential botulinum neurotoxin inhibitors. Obtained high-resolution crystal structures of selected inhibitors bound to botulinum neurotoxins. Continued development of cell-free screening models for assessment of staphylococcal enterotoxin (SE) therapeutics. Initiated high-throughput screening technology to investigate potential ricin therapeutics.
- 2065 Therapeutics, Viral - Determined the therapeutic potential of candidate drugs for treatment of disease caused by filovirus or orthopox infections. Characterized filovirus polymerase as a potential antiviral drug target and initiated the development of in vitro assays incorporating filovirus polymerase to assess antiviral activity.
- 5000 Therapeutics, Anthrax Studies - Initiated development and testing of new approaches for the treatment of inhalational anthrax. Focused on two classes of compounds that inhibit the activity of the lethal toxin produced during anthrax infection and on an enzyme target, nicotinamide adenine dinucleotide (NAD) synthetase, which is critical for the germination and vegetative life cycle of B. anthracis.

**Total** 12553

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**FY 2003 Planned Program:**

- 982 Therapeutics, Bacterial - Correlate metabolic measurements as a rapid and sensitive means to detect antibiotic activity with conventional susceptibility determinations and appropriate animal models of infection. Establish collaborative research and development agreements with pharmaceutical companies to test new and investigational antibiotics. Initiate evaluation of selected therapeutic compounds against Brucella.
- 4800 Therapeutics, Toxin - Identify novel human and chimeric monoclonal antibodies by phage display methodology to aid in determining potential as botulinum neurotoxin therapeutics. Perform custom synthesis of lead compounds identified by high-throughput screening assays for botulinum neurotoxin and SE toxins. Co-crystallize toxin and lead therapeutics and collect x-ray diffraction datasets. Support development of combinatorial libraries and diversity sets for potential toxin therapeutics.
- 2060 Therapeutics, Viral - Initiate development of intervention strategies for filovirus-induced shock and therapeutic approaches that combine antiviral and anti-shock drug therapy. Continue research for development of in vitro assays utilizing filovirus polymerase as a potential antiviral drug target.
- 5000 Therapeutics, Anthrax Studies - Continue extramural research efforts toward the development and testing of new approaches for the treatment of inhalational anthrax. Focus will continue on two classes of compounds that inhibit the activity of the lethal toxin produced during anthrax infection and on the enzyme target NAD, which is critical for the germination and vegetative life cycle of B. anthracis.

**Total** 12842

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**FY 2004 Planned Program:**

- 1249 Therapeutics, Bacterial - Evaluate novel lead antimicrobial compounds in small animal models for anthrax and plague. Initiate in vitro studies on the efficacy of established and investigational antibiotics against Francisella tularensis (tularemia).
- 5387 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.
- 2498 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.

**Total** 9134

**FY 2005 Planned Program:**

- 1287 Therapeutics, Bacterial - Perform expanded in vivo studies on novel antimicrobial compounds against validated biological warfare threat agents.
- 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.

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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 (Cont):**

- 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. Utilize in vitro assays based on filovirus polymerase to screen potential antiviral drugs.

**Total** 9411

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vaccines	5833	5670	7054	7267

**FY 2002 Accomplishments:**

- 2925 Vaccines, Bacterial - Obtained genetic sequencing data and established a database for Y. pestis, B. mallei, B. anthracis (anthrax), and Brucella spp.; evaluated data for potential for genetic engineering and genetic modification and determined genetic identifiers of various isolates of the organisms. Evaluated genetically modified strains of these pathogens for virulence in animals and identified genes that encode for novel virulence factors that may be new vaccine targets. Expanded and characterized strain collections of bacterial threat agents to identify strains that may be resistant to existing vaccines and/or those under development. Characterized in vitro host cell gene expression during infection with plague, glanders, anthrax, and brucella and identified novel bacterial genes expressed. Tested multiagent vaccine constructs in avirulent anthrax and brucella platforms for immunogenicity in mice.

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<p><b>FY 2002 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1454 Vaccines, Toxin - Completed experiments involving the crystallization of toxins and toxin vaccine candidates for structural studies and biophysical characterization. Assessed novel adjuvants and delivery vehicles for aerosol-administered vaccines. Investigated potential neutralizing epitopes in the translocation domains of botulinum neurotoxin serotypes.</li> <li>• 1454 Vaccines, Viral - Continued investigating poxvirus immunity to determine the feasibility of replacing vaccinia immune globulin (VIG) with monoclonal antibodies and of constructing a safe and effective vaccine to replace the vaccinia virus vaccine for variola (smallpox).</li> </ul> <p><b>Total 5833</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2778 Vaccines, Bacterial - Develop mutations in various biological agents for in vivo expressed genes to examine role in virulence. Characterize the mechanism(s) of vaccine resistance in selected strains of various biological agents. Determine mechanisms and correlates of protection with efficacious B. mallei vaccines. Evaluate differences in the course of brucella infection in different mouse strains. Test multiagent vaccine constructs for immunogenicity in animal models.</li> <li>• 927 Vaccines, Toxin - Compare the efficacy of constructs with neutralizing epitopes in other domains of botulinum neurotoxin serotypes with the current heavy chain (Hc) subunit toxin vaccine candidates.</li> <li>• 1965 Vaccines, Viral - Complete investigating poxvirus immunity to determine the feasibility of replacing VIG with monoclonal antibodies and constructing a new vaccine to replace the vaccinia virus vaccine. Investigate the role of cytotoxic T cells in the Ebola virus-mouse model.</li> </ul> <p><b>Total 5670</b></p>		
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<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3538 Vaccines, Bacterial - Continue studies on the molecular mechanisms of pathogenesis of plague, glanders, and anthrax. Identify additional virulence determinants of Brucella spp. Initiate a study to identify and characterize novel virulence proteins of F. tularensis.</li> <li>• 1758 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>• 1758 Vaccines, Viral - Complete investigating the role of cytotoxic T cells in the Ebola virus-mouse model. Initiate research to investigate the role of cytotoxic T cells in the filovirus model in higher animal species.</li> </ul> <p><b>Total</b> 7054</p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3645 Vaccines, Bacterial - Continue to characterize novel virulence genes and gene products of selected bacterial threat agents to support discovery of new medical countermeasures.</li> <li>• 1811 Vaccines, Toxin - Clone and express chimeric constructs to evaluate practical feasibility of multivalent toxin vaccines by protein engineering.</li> <li>• 1811 Vaccines, Viral - Continue investigating the role of cytotoxic T cells in the higher animal model of filovirus infection.</li> </ul> <p><b>Total</b> 7267</p>		
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Engineered Pathogen Identification and Countermeasures Program	2000	5000	0	0

**FY 2002 Accomplishments:**

- 2000 Engineered Pathogen Identification and Countermeasures Program (formerly Bug to Drug Identification and Countermeasures Program) - Conducted research directed toward decreasing the time required to identify and counter biological threats. Focused on rapidly identifying host proteins altered by infection with biological threat pathogens and rapidly developing countermeasures based on how the countermeasures affect the host, outside of their desired effect against the pathogen. This research utilized structure-based small molecule design, microfluidics-based bioassays, and computational molecular biology and pathway modeling.

**Total** 2000

**FY 2003 Planned Program:**

- 5000 Engineered Pathogen Identification and Countermeasures Program (formerly Bug to Drug Identification and Countermeasures Program) - Identify the impact of bio warfare pathogens on the human body using computer models and direct protein analysis. 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** 5000

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	3251	4062	3931	4050

**FY 2002 Accomplishments:**

- 3251 Diagnostic Technologies - Continued investigating new diagnostic technologies based upon state-of-the-art biotechnological approaches for the enhanced recognition of infections by biological threats of military interest including new gene analysis chemistries and immunodiagnostics. Continued research to identify new biological markers and host responses for early recognition of infection including primer and probe sets against new gene targets. Continued to identify unique host immune markers using in vitro and in vivo models and developed primer and probe sets for these markers.

**Total** 3251

**FY 2003 Planned Program:**

- 4062 Diagnostic Technologies - Conduct basic research on new diagnostic approaches to the early recognition of infection; develop reagents and associated assays to aid in identifying new host and agent-specific biological markers that can be used for early recognition of infection. Continue 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.

**Total** 4062

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**FY 2004 Planned Program:**

- 3931 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.

**Total** 3931

**FY 2005 Planned Program:**

- 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.

**Total** 4050

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	409	0	0

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**FY 2003 Planned Program:**

- 409 SBIR

**Total 409**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	34195	40977	22699	22622	15415	15692	16442	13095	Cont	Cont
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34554	35515	49939	44621	39530	39527	42528	38573	Cont	Cont

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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	9701	8228	9374	9628	10642	10706	10853	11056	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 (Pretreatments, Therapeutics, and Diagnostics) and directed research efforts (Low Level Chemical Warfare Agent Exposure and Non-Traditional Agents).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Low Level Chemical Warfare Agent Exposure	4500	4000	2000	1000

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>4500 Low Level Chemical Warfare Agent Exposure - Continued studies on identification of chronic pathological and behavioral effects of low level chemical warfare agent (CWA) exposures. Investigated putative mechanisms of low level toxicity. Developed consensus for a coherent methodology for studies across endpoints and model species to permit integration of disparate endpoints, post-hoc analysis of research results, and extrapolation to higher animal species. Examined alterations in muscle physiology produced by repetitive low-dose nerve agent exposures. Measured in vitro membrane electrical alterations caused by low concentrations of nerve agent. Investigated effects of acute and chronic exposure to low dose CWA on blood and brain cell apoptosis.</li> </ul> <p><b>Total 4500</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>4000 Low Level Chemical Warfare Agent Exposure - Continue studies on neurotoxic effects of low dose CWA exposure. Continue investigation of alterations in muscle physiology due to repetitive low dose CWA exposure. Characterize ultrastructural morphology, immunochemistry, and gene expression following low level chemical exposure. Study the effects of low level chemical exposure on extracellular neurotransmitter levels. Evaluate organophosphate anhydrolase enzyme for potential use as a biomarker to confirm low level chemical exposure.</li> </ul> <p><b>Total 4000</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2000 Low Level Chemical Warfare Agent Exposure - Identify biomarker(s) to confirm low level chemical exposure and develop behavior assessment model. Identify potential medical countermeasures for low level chemical exposure.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

**Total** 2000

**FY 2005 Planned Program:**

- 1000 Low Level Chemical Warfare Agent Exposure - Continue to identify biomarker(s) to confirm low level chemical exposure. Validate neurobehavioral deficits following low level chemical exposure.

**Total** 1000

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Non-Traditional Agents	1000	0	0	0

**FY 2002 Accomplishments:**

- 1000 Non-Traditional Agents - Developed strategies to improve efficacy of current medical countermeasures against non-traditional agents (NTAs). Studied the effects of NTAs on energy metabolism in cardiac muscle cells.

**Total** 1000

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Pretreatments	2108	1883	3700	4330

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 2108 Pretreatments - Identified peptide for potential use as pretreatment for vesicant exposure. Exploited new technology to develop recombinant biological scavengers. Initiated studies to investigate gene encoding serum carboxylesterase (CaE).</li> </ul> <p><b>Total 2108</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1883 Pretreatments - Target mechanism of vesicant injury and explore intervention of pro-inflammatory mediators and calcium modulators. Investigate efficacy of sulfur donors as anti-cyanide pretreatments. Develop animal model to test cyanide pretreatment compounds. Express and purify a recombinant human CaE for crystallization. Evaluate circulatory stability of recombinant bioscavengers.</li> </ul> <p><b>Total 1883</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3700 Pretreatments - Continue pretreatment intervention studies of vectors to deliver bioscavenger genes. Identify mechanism of action of vesicant pretreatment compounds. Evaluate cyanide toxicity using an inhalation model. Determine x-ray crystallographic structure of catalytic scavengers. Investigate efficacy of sulfur donors and methemoglobin formers as cyanide pretreatments.</li> </ul> <p><b>Total 3700</b></p>		
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**FY 2005 Planned Program:**

- 4330 Pretreatments - Explore purification and delivery strategies of vesicant pretreatments. Screen anti-cyanide compounds for efficacy.

**Total** 4330

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	1495	1458	2624	3070

**FY 2002 Accomplishments:**

- 1495 Therapeutics - Identified through gene sampling target sites for neuroprotection. Identified vesicant therapeutic targets for candidate compound combination therapies. Initiated efforts to determine the optimal hypochlorite concentration for use in decontaminating chemical agent-exposed skin and agent-contaminated wounds. Determined the role of pro-inflammatory mediators derived from the release of arachidonic acid following sulfur mustard (HD) exposure. Studied biochemical mechanisms of HD toxicity and protection.

**Total** 1495

**FY 2003 Planned Program:**

- 1458 Therapeutics - Incorporate biomarker panels into screening modules. Evaluate combination therapies for neuroprotection efficacy. Evaluate antidotes representing new strategies to address medical countermeasure requirements against conventional and emerging agents.

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**FY 2003 Planned Program (Cont):**

**Total** 1458

**FY 2004 Planned Program:**

- 2624 Therapeutics - Characterize animal models to test efficacy of nerve agent bioscavengers. Test physiologic pharmacokinetic model of CWAs. Determine effects of 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. Investigate enzymatic targets of HD. Evaluate drug treatment strategies and combinations of therapies for nerve agent-induced seizures.

**Total** 2624

**FY 2005 Planned Program:**

- 3070 Therapeutics - Identify intervention targets to acute lung injury caused by HD.

**Total** 3070

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	598	766	1050	1228

**FY 2002 Accomplishments:**

- 598 Diagnostics - Investigated in vitro validation of sulfur mustard (HD)-induced proteases as biomarkers for exposure.

**Total** 598

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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 Planned Program:**

- 766 Diagnostics - Conduct electrophysiological analysis of CWAs in cultured cells. Analyze central nervous system (CNS) and peripheral protein production following soman exposure. Develop new assays for HD adducts in plasma and for diagnosing cyanide exposure.

**Total** 766

**FY 2004 Planned Program:**

- 1050 Diagnostics - Identify molecular intracellular proteomic changes following HD exposure.

**Total** 1050

**FY 2005 Planned Program:**

- 1228 Diagnostics - Pursue development of a nanodevice for diagnosing CWA exposure using synthetic modeling and molecular imprinting.

**Total** 1228

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	121	0	0

**FY 2003 Planned Program:**

- 121 SBIR

**UNCLASSIFIED**

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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 Planned Program (Cont):**  
**Total     121**

<b><u>C. Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	17977	19216	17880	18269	19994	20104	20368	21750	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	10672	11470	13199	13489	12571	12644	12818	13058	Cont	Cont

Project TC1/Line No: 008

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# **BUDGET ACTIVITY 2**

## **APPLIED RESEARCH**

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/</b> <b>BA2 - Applied Research</b>	<b>PE NUMBER AND TITLE</b> <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED</b> <b>RESEARCH)</b>
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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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	145706	173362	106451	104385	101916	88711	86059	85014	Continuing	Continuing
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	93534	113169	65872	63494	66507	52915	49249	50169	Continuing	Continuing
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	34195	40977	22699	22622	15415	15692	16442	13095	Continuing	Continuing
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	17977	19216	17880	18269	19994	20104	20368	21750	Continuing	Continuing

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<p align="center"><b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b></p>	<p>DATE <b>February 2003</b></p>
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BUDGET ACTIVITY  
**RDT&E DEFENSE-WIDE/  
 BA2 - Applied Research**

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

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

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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>	<b><u>FY 2002</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 2003 PB)	146431	262177	95242	94494
Current Biennial Budget Estimates (FY 2004/2005)	145706	173362	106451	104385
Total Adjustments	-725	-88815	11209	9891
a. Congressional General Reductions	-4225	-143615	0	0
b. Congressional Increases	3500	54800	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	-775	0	0	0
e. Other Adjustments	0	0	11209	9891

**Change Summary Explanation:**

**Funding:** FY03 - Transfer to the Department of Homeland Security Bioterrorism initiatives (-\$137,000K HS2).

FY03 - Adjustment for CBD (+\$42,900K CB2; +\$9,800K TB2; +\$2,100K TC2; ) to fund high priority programs.

FY04 - Adjustment to provide for special investigations into Chem Bio defense technology to include threat agents, operational sciences, modeling, simulants, and nuclear, biological, chemical survivability (CB2 - \$+\$13,000K).

FY05 - Adjustment to provide for special investigations into Chem Bio defense technology to include threat agents, operational sciences, modeling, simulants, and nuclear, biological, chemical survivability (CB2 - \$+\$12,000K).

**Schedule:**

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

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

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

**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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	93534	113169	65872	63494	66507	52915	49249	50169	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. 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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	29820	27349	18900	16800

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>CB2</b>
<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 2200 Chemical Imaging Sensor (DTO-CB19) - Demonstrated a 16-pixel spectrometer operating at 360 Hz with off-line processing of data.</li> <li>• 1600 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Initiated evaluation of a new series of taggant chemistry for multi-agent, multiplexing Polymerized Chain Reaction (PCR) assays to reduce overall number of needed assays. Evaluated fluidic systems from PCR breadboard to reduce processing time, target was 20 minutes for sample processing.</li> <li>• 4905 Detection of Agent in Water (DTO-CB37) - Completed construction of initial breadboard component candidates. Completed testing of component candidates to identify shortfalls. Initiated a limited military utility assessment to demonstrate technology.</li> <li>• 3815 Point Detection, Biological Identification - Continued development of Force Discrimination Assay (FDA). Continued development of concepts for automation and initiated testing of chip-based phylogenetic analysis of biological materials. Initiated evaluation of quantum dot technology for application to enhance antibody ticket technology for improved stability and sensitivity. Identified combinatorial peptides as potential simulants for biological agents.</li> <li>• 1690 Point Detection, Detector Modifications - Initiated modification of point detection systems to enhance performance against new chemical targets. Initiated assessment of modifications on system impacts to power usage, reliability, and overall system life expectancy. Broadened spectral knowledge base to predict performance of active and passive IR sensors for detection of surface contamination. Initiated evaluation of novel materials and material treatment solutions to decrease penetration of aerosol particulates through overgarments. Transitioned to Advanced Technology Development (6.3).</li> </ul>		
Project CB2/Line No: 017	Page 6 of 70 Pages	Exhibit R-2a (PE 0602384BP)

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**FY 2002 Accomplishments (Cont):**

- 6560 Point Detection, Integrated CB Detection - Initiated characterization of biomarkers observed in Py-GC-IMS sensors against performance matrix of sensitivity, selectivity, and interference rejection for optimal design trade-off analysis. Initiated evaluation and development of novel concepts, methodologies, and techniques for biological discrimination, advanced aerosol handling, and triggering capabilities for chemical aerosols.
- 6400 Standoff Detection, Biological Standoff - Investigated new and novel methods for detecting biological aerosols. Technologies included Brillouin Spectroscopy, Passive Interferometry, and Polarized Light Scattering.
- 1300 Standoff Detection, Chemical Standoff - Collected quantitative vapor and diffuse reflectance data on chemical simulants.
- 1350 Standoff Detection, Integrated CB Detection - Initiated a program to develop technology to detect the presence of CBW contaminants on surfaces for use in vehicular and handheld systems Joint Service Chemical Detector (JSCD). Initial studies focused on active and passive optical technologies that could be employed on or from a vehicular platform. Conducted assessment of standoff technologies that may be implemented simultaneously against chemical and biological agents. Initiated a program to develop a wide agent spectral range technology to detect the presence of CBW vapors, aerosols, and rains (WideSpec).

**Total** 29820

**FY 2003 Planned Program:**

- 900 End-of-Service-Life Indicators for NBC Mask Filters (DTO-CB36) - Complete baseline evaluations of candidate technologies. Downselect best candidate technologies. Fabricate and evaluate ESLI/filter concept models. Optimize baseline design and determine optimum ESLI location.

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**FY 2003 Planned Program (Cont):**

- 4500 Standoff Biological Aerosol Detection (DTO-CB35) - Initiate construction and characterization of breadboards to demonstrate the capability to detect and discriminate (bio vs. non-bio) 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.
- 1800 Wide Area Aerial Reconnaissance for Chemical Agents (DTO-CB53) - Perform airborne phenomenology tests with existing hyperspectral imaging sensors (100-Hz, 2x8 TurboFT and 0.3-Hz, 128x128 AIRIS). Complete engineering designs for a 30-Hz, 64-pixel TurboFT, and a 3-Hz, 128x128 AIRIS.
- 5900 Integrated CB Standoff Detector (DTO-CB49) - Conduct initial downselection of potential technologies based on market survey and user input. Downselection process will involve user community as well as internal and external technical experts and will include factors such as performance, logistics, platform, operational concerns, maturity, and cost. Initiate the development and testing of higher risk subcomponents to minimize the risk in the later breadboard development phase to demonstrate the capability to detect chemical agents at a concentration of 135 mg/m<sup>2</sup> and biological agents at a concentration of 3,000 agent containing particles per liter of air (ACPLA) at a range of 1 km.
- 1300 Decontamination, Solution Chemistry - Optimize formulations for chemical and biological decontamination systems. Initiate material compatibility and efficacy testing on an expanded test bed for promising approaches. Optimize an innovative catalytic buffering system to provide pH control in solution decon formulations. Complete final kinetics and panels testing for the combined enzyme decontamination system.

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**FY 2003 Planned Program (Cont):**

- 1400 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Continue development of new taggant chemistry for multi-agent, multiplexing PCR assays. Conduct a feasibility analysis on what is required to make multiplex and multi-agent assays cost effective. Conduct an analysis of alternatives based on feasibility study to design an optimized platform using multi-agent, multiplexing PCR assays.
- 2700 Detection of Agent in Water (DTO-CB37) - Complete downselection of technology for the detection of chemical agents in potable water. Continue technology development of detection of biological agents in potable water to include sample processing and preparation.
- 4100 Point Detection, Biological Identification - Complete development of Force Discrimination Assay (FDA). Continue development and testing automation of chip-based phylogenetic analysis of biological materials. Demonstrate quantum dot technology for application to enhance antibody ticket technology for improved stability and sensitivity. Conduct evaluation and development of database for protein markers from biological agents for mass spectroscopy based systems. Evaluate the potential of aptamers as substitutes for antibodies in current platforms.
- 3650 Lightweight Integrated CB Detection - Develop and evaluate technologies. Develop and populate database for downselection criteria. Initiate an analysis of alternatives to downselect best technologies to meet the requirements of the Joint Modular CB Detector. Focus on physical methodologies like optical spectroscopy and pyrolysis gas chromatography ion mobility spectroscopy to address the requirements.
- 1099 Point Detection, Integrated CB - Initiate exploration of new concepts for small, combined chemical and biological identifiers. Continue evaluation and development of millimeter wave spectroscopy and data fusion techniques to combine chemical and biological detection requirements.

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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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**FY 2003 Planned Program (Cont):**

**Total** 27349

**FY 2004 Planned Program:**

- 4500 Standoff Biological Aerosol Detection (DTO-CB35) - Complete construction and characterization of breadboards to demonstrate the capability to detect and discriminate (bio vs. non-bio) biological agents at a concentration of 1,000 agent containing particles per liter of air (ACPLA) at a range of 1 km.
- 1500 Wide Area Aerial Reconnaissance for Chemical Agents (DTO-CB53) - Develop a 30-Hz frame rate, 64-pixel Fourier transform infrared (FTIR) hyperspectral imager (TurboFT). Perform sensor characterization tests. Develop off-line algorithms and signal processing techniques.
- 3700 Integrated CB Standoff Detector (DTO-CB49) - Complete development and testing of the higher risk subcomponents to project the capability to detect chemical agents at a concentration of 135 mg/m<sup>2</sup> and biological agents at a concentration of 3,000 agent containing particles per liter of air (ACPLA) at a range of 1 km. Complete the final downselection of the most promising technology(ies). The final downselection will be supported by the results and data obtained in the previous subcomponent development phase.
- 7200 Detection of CB Contamination on Surfaces (DTO-CB52) - Complete construction and conduct initial characterization of breadboard(s) 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. Perform final downselection.

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

- 2000 Point Detection, Biological Identification - 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.

**Total** 18900

**FY 2005 Planned Program:**

- 2600 Standoff Biological Aerosol Detection (DTO-CB35) - Optimize overall system performance based on test results obtained from testing.
- 1500 Wide Area Aerial Reconnaissance for Chemical Agents (DTO-CB53) - Develop a 3-Hz, 128x128 tunable hyperspectral imager (AIRIS). Perform sensor characterization tests. Develop off-line algorithms and signal processing techniques.
- 4100 Integrated CB Standoff Detector (DTO-CB49) - Initiate breadboard construction of the final downselected technology(ies) to demonstrate the capability to detect chemical agents at a concentration of 135 mg/m<sup>2</sup> and biological agents at a concentration of 3,000 agent containing particles per liter of air (ACPLA) at a range of 1 km.
- 4500 Detection of CB Contamination on Surfaces (DTO-CB52) - Upgrade and test breadboard(s) based on results of characterization. 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.

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

- 4100 Point Detection, Integrated CB Point Detection - Initiate exploration and concept development for new concepts for small, combined chemical and biological identifiers. Conduct feasibility studies and perform a cost to benefit analysis on "low consumable or reagentless" concepts. Initiate breadboard system and component design for a fieldable detector at ambient conditions. Complete testing of novel algorithms for improved chemical and biological discrimination.

**Total** 16800

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	9976	8250	5700	6528

**FY 2002 Accomplishments:**

- 1100 Advanced Adsorbents for Protection Applications (DTO-CB08) - Developed an improved/modified ASZM-TEDA adsorbent that enhances the protection against ammonia and formaldehyde. Identified adsorbent bed compositions that provided reduced JSGPM/JSAM encumbrance (pressure drop; weight; size). Evaluated chemical removal performance of ASZM-TEDA adsorbent and approximately 500 other novel adsorbent materials against design limiting Toxic Industrial Chemicals (TICs). Developed initial concept compositions and transitioned novel adsorbents for removal of TICs for incorporation into the JSGPM.

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**FY 2002 Accomplishments (Cont):**

- 800 End-of-Service-Life Indicator for NBC Mask Filters (DTO-CB36) - Initiated development of baseline data characterizing the performance of the most promising End-of-Service-Life Indicator (ESLI) technologies. Assessed performance parameters including reaction time, range of detection, and effects of temperature and humidity using carbon bed test cells.
- 1200 Self-Detoxifying Materials for Clothing Applications (DTO-CB45) - Assessed enzymes, polyoxometalates, and cyclodextrins for their incorporation into nanofibers for agent deactivation. Identified candidate reactive nanoparticle candidates for incorporation into films and fibers for improved barrier protection. Developed a process to bind N-halamines to target clothing material, and initiated testing to characterize and quantify the reactivity of treated materials.
- 2201 Collective Protection, Filtration - Completed single pass filtration model validation and evaluated candidate adsorbents against high priority TICs and for use in regenerative filtration applications. Demonstrated single pass filter concepts using nano-materials. Initiated proof-of-principle testing and evaluation of 50 CFM pressure-temperature swing adsorption filter to validate model. Evaluated and identified best performing candidate adsorbents for use in regenerative filtration (P/TSA) applications. Initiated evaluation of electrostatic filter particulate and aerosol capture enhancement and degradation effects of TICs on HEPA filters and ways to mitigate. Initiated trade study assessment on the feasibility and application of open and closed circuit air supply and rebreather technologies. Developed Residual Life Indicator (RLI) test beds at Naval Research Lab (NRL) and Edgewood Chemical and Biological Center (ECBC), continued chemical sensor RLI testing, and started physical sensor testing.

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**FY 2002 Accomplishments (Cont):**

- 1222 Collective Protection, Shelters - Completed Collective Protection Front End Analysis and Master Plan. Continued development and evaluation of advanced CB shelter materials (shell, support, airlocks, liner, seams, and seals). Developed new CB skin material, identified and evaluated commercial waterproof zippers, developed and designed prototype linear track profiles, assessed four hermetic sealing methodologies for current set of shelter materials. Initiated development and assessment of chemistries for self-decontaminating shelter materials. Provided initial assessment of failure mechanisms of shelter materials to conventional weapons blast pressure effects.
  
- 1924 Individual Protection, Clothing - Optimized aerosol threat mediation material (nanofiber web) and processes resulting in a more durable fabric system. Initiated the testing of fielded and developmental protective garment materials to evaluate their effectiveness against TICs. Conducted laboratory trials to enhance the permselectivity of membranes by ion implantation, and characterized the material physical properties and CB agent protection capabilities of those trial membranes. Demonstrated through a DUST effort the large scale production of protective membrane-based garments for military and civilian applications and submitted candidates to the JSLIST Alternate Source Qualification program for consideration. Identified the most promising permselective membrane candidates and initiated the characterization of those candidates. Examined novel materials and material treatment solutions to decrease penetration of non-traditional threat agents (NTA) aerosols through overgarments.

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**FY 2002 Accomplishments (Cont):**

- 1529 Individual Protection, Masks - Completed concept studies for the long-term integrated mask/helmet. Completed preliminary technology feasibility studies for advanced mask concepts. Compared existing filtration media with reactive iodine media with respect to physical properties (such as pressure drop and dust/particulate removal), and transitioned further development to the Air Purification Systems project. Screened candidate sorbent media structures to evaluate their critical properties, and identified the three best candidates for further development. Screened candidate advanced lens materials to evaluate their critical properties and downselected to three materials for further development. Identified available technologies that can be used for assessing mask characteristics critical for improved protection, flow dynamics, heat and moisture transfer, and fogging.

**Total** 9976

**FY 2003 Planned Program:**

- 1200 Advanced Adsorbents for Protection Applications (DTO-CB08) - Complete database and model of adsorption equilibrium and rate processes for four agent classes. Identify at least one adsorbent bed composition that provides the level of protection required by the JSGPM, JCPE, and JTCOPS programs for all CW agents and the highest priority TICs. Develop at least one adsorbent bed composition providing for effective P/TSA system performance (meeting JCPE requirements) for all chemical warfare agents and all high priority TICs.

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**FY 2003 Planned Program (Cont):**

- 1900 Collective Protection, Filtration - Complete database and model of adsorption equilibrium and rate processes for high priority TICs. Complete development of initial pressure, temperature, and electrical swing adsorption (P/T/E/SA) regeneration models and fabrication of test stands. Complete proof-of-principle testing and evaluation of 50 CFM pressure-temperature swing adsorption filter to validate model. Initiate 200 CFM pressure-temperature swing adsorption filter to assess scalable model and applicability for advanced system integration. Optimize candidate adsorbents for use in regenerative filtration (P/T/ESA) applications that are effective against a wide spectrum of TIC and Chemical Warfare Agents (CWA). Complete evaluation of electrostatic and biocidal filter enhancement for aerosol and particulate capture and deactivation. Evaluate degradation effects of TICs on HEPA filters and ways to mitigate. Initiate literature review for developing hybrid air purification systems incorporating technologies providing broad protection. Finish trade study assessing feasibility and application of open and closed circuit air supply and rebreather technologies. Complete chemical and physical Residual Life Indicators sensor testing.
- 900 Collective Protection, Shelters - Continue development and evaluation of advanced CB shelter materials (shell, support, airlocks, liner, seams, and seals). Test new CB skin material including constructed shelter systems. Continue development and testing of chemistries for self-decontaminating shelter materials. Complete initial assessment and modeling of shelter materials failure mechanisms to conventional weapons blast pressure effects and transition to JCPE.

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**FY 2003 Planned Program (Cont):**

- 1500 Self-Detoxifying Materials for Clothing Applications (DTO-CB45) - Continue to assess new reactive compounds and treatments for improved detoxification in membranes. Develop concepts for nanoreactors and surface-migrating phases for improved agent breakdown within membranes and coatings. Select relevant reactive nanoparticles and polymeric materials for subsequent processing and testing studies. Characterize the reaction kinetics and loading capacity of N-halamines treated materials with CWA simulants.
  
- 1050 Individual Protection, Clothing - Complete testing of fielded and developmental protective garment materials to evaluate their effectiveness against TICs, and provide recommendations to the user community. Characterize the surface phenomena occurring in ion implanted polymers and determine the transport properties of moisture and chemicals of those polymers. Complete transport and physical characterization of selected candidate permselective membranes, and initiate detailed analysis of structure-property relationships. Optimize materials and material treatment solutions for overgarments to improve protection against Non Traditional Agents (NTA) aerosols. Identify sampling techniques and assess clothing air velocities as an initial step in evaluating the effects of atmospheric temperature and wind on agent penetration of individual protective equipment (IPE). Validate 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 Maneuver Control System (MCS) capacity.

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**FY 2003 Planned Program (Cont):**

- 1700 Individual Protection, Masks - Begin development of advanced mask concepts focusing on lightweight system integration, a wider range of protection, and improved thermal attenuation. Assemble advanced mask concept prototypes for preliminary human factor studies. Initiate optimization of candidate sorbent media structures by the testing of media properties and the modification of that media to improve performance. Optimize candidate lens materials through the evaluation of chemical and physical properties and the modification of that material to enhance performance. Develop and evaluate new and improved mask technologies to improve protection through novel sealing and pressurization options. Identify appropriate aerosol generation and detection equipment, develop and validate test procedures, and conduct protection factor study using mask headform tester and controlled leaks.

**Total** 8250

**FY 2004 Planned Program:**

- 1100 Advanced Adsorbents for Protection Applications (DTO-CB08) - Validate model of single-pass and regenerative filtration adsorption models. Complete performance verification of adsorbents for use in NBC filtration systems. 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.

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

- 500 Collective Protection, Filtration - Characterize constraints of mature candidate adsorbent compositions, including aging, cyclic flow capacity, relative humidity, temperature and material compatibility. Assess chemical removal performance of prototype JSGPM filters containing adsorbent developed under DTO-CB08. 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 technical workshop for developing hybrid air purification systems incorporating technologies providing broad protection. Downselect anti-microbial aerosol/particulate media, complete initial testing and develop enhanced prototype.
- 1100 Collective Protection, Shelters - Continue development and testing of advanced CB shelter materials (shell, support, airlocks, liner, seams, and seals) and constructed shelter systems. Identify and test optimal chemistries for self-decontaminating shelter materials and applications.
- 900 End-of-Service-Life Indicators for NBC Mask Filters (DTO-CB36) - Fabricate and evaluate first-generation ESLI prototype demonstrator units against the target agents to validate achievement of performance goals. The evaluation will include environmental testing to assess the effects of temperature and humidity extremes, long-term storage, and rough handling on ESLI performance.

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

- 1500 Self-Detoxifying Materials for Clothing Applications (DTO-CB45) - Evaluate durability of carbon-loaded melt blown/electrospun liners; measure breakthrough, speed and extent of reaction of agent simulants in scaled up membranes; develop adhesive bonding methodology for elastic detoxifying membrane adhesion to woven and knit fabrics; develop fabric/clothing design to maximize reactive treatments. Prepare and evaluate polymeric films, fibers, and/or permselective membranes with incorporated reactive nanoparticles of selected types and different loading levels. Treat full garments with N-halamines and other oxidative compounds and assess the physical and chemical characteristics of those garments.
- 600 Individual Protection, Masks - Refine advanced mask system concepts using actual technologies to the maximum extent possible. Optimize candidate mask sealing options and assess anti-fogging and moisture control technologies.

**Total** 5700

**FY 2005 Planned Program:**

- 1500 Collective Protection, Filtration - Develop hybrid air purification systems that incorporate mature adsorptive regenerative, and catalytic technologies 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. Test advance aerosol/particulate filters providing enhanced biological protection.
- 1000 Collective Protection, Shelters - Continue development and testing of advanced CB shelter materials (shell, support, airlocks, liner, seams, and seals) and constructed shelter systems. Perform full scale testing of self-decontaminating shelter systems.

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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. Conduct testing of full garments protected against NTA aerosols, and assess and optimize garment design. Develop swatch test technology for assessing role of wind speed, temperature in challenge penetration of IPE. Initiate development of advanced ensemble closure technologies to reduce/prevent aerosol penetration. Identify thermal management technologies for protective ensemble applications.
- 2500 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 factor evaluations. Prepare human-use protocol, and conduct human protection factor study with monodisperse inert aerosols.

**Total** 6528

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	5829	4100	3500	3400

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**FY 2002 Accomplishments:**

- 900 Decontamination, Enzymatic Decontamination (DTO-CB09) - Completed characterization of H-agent enzymes. Conducted initial efficacy testing of a combined enzyme formulation.
- 1600 Decontamination, Oxidative Decontamination Formulation (DTO-CB44) - Optimized oxidative formulations using a peroxycarbonate-based approach and began kinetics, toxicity, and material compatibility testing. Developed several candidate formulations and evaluated commercial catalysts to improve oxidation rates for a peracid-based decontaminant.
- 1350 Decontamination, Sensitive Equipment - Continued developmental efforts to address Joint Service Sensitive Equipment Decon Program (JSSED) Block II and III approaches focusing on plasma technology and spot cleaning methodology using emerging solvents and solid/solvent suspensions.
- 904 Decontamination, Solid Phase Chemistry - Evaluated the physical limitations of novel solid phase technology for decontamination operations. Efforts focused on nanoscale metal oxides and zeolites. Implemented these findings into other areas of the decon program and determined the best future uses for these materials.
- 1075 Decontamination, Solution Chemistry - Completed a feasibility study examining the potential to combine multiple developmental solution chemistry approaches into single formulations. Initiated live agent screening using dioxiranes. Optimized enzymes effective against GV and other organophosphorous agents.

**Total** 5829

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<b>FY 2003 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 2100 Decontamination, Oxidative Decontamination Formulation (DTO-CB44) - Conduct contact hazard and off-gas testing on coupons and continue material compatibility testing for the peroxy carbonate approach. Optimize formulations using the peracid approach and conduct live agent testing with candidate formulations. Integrate other oxidative approaches into the DTO.</li> <li>• 1200 Decontamination, Sensitive Equipment - Conduct feasibility studies for decontamination technology solutions for JSSSED Block II and III using plasma technology and spot cleaning methodology using reactive solid/solvent suspensions.</li> <li>• 800 Decontamination, Solid Phase Chemistry - Develop and demonstrate novel solid and sorbent decontamination applications using nanoscale metal oxides, solvents, and reactive additives.</li> </ul>		
<b>Total</b>	4100	
<b>FY 2004 Planned Program:</b>		
<ul style="list-style-type: none"> <li>• 2200 Decontamination, Oxidative Decontamination Formulation (DTO-CB44) - Conduct 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>• 500 Decontamination, Sensitive Equipment - Complete plasma technology demonstration for applications in JSSSED Blocks II/III</li> <li>• 800 Decontamination, Solid Phase Chemistry - Conduct materials compatibility studies and coupon validation studies on promising solid phase efforts identified in FY02-03.</li> </ul>		
<b>Total</b>	3500	
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**FY 2005 Planned Program:**

- 2300 Decontamination, Oxidative Decontamination Formulation (DTO-CB44) - Continue chamber testing over operational temperature range, finish material compatibility testing, and formulate new oxidative approaches into a dry powder and/or concentrated liquid.
- 300 Decontamination, Sensitive Equipment - Conduct technology watch for potential JSSED product improvements.
- 800 Decontamination, Solid Phase Chemistry - Conduct a science and technology level analysis of alternatives on reactive and sacrificial coating materials.

**Total** 3400

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Supporting Science and Technology	14871	12610	18400	18100

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 2558 Aerosol Technology - Measured quantitative performance of six candidate aerosol collectors for advanced point biological detection technology. Initiated design of advanced aerosol inlets to meet Joint Service requirements for high collection efficiency over the respirable particle size range at wind speeds up to 60 mph. Initiated the design of a new generation of aerosol concentrators using mini-machining technology to reduce size, power consumption, and weight, in order to meet stringent requirements for advanced detection systems. Continued to provide controlled biological simulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for Technology Readiness Evaluation (TRE).</li> <li>• 3731 Threat Agents - Continued assessment of gaps in threat agent data, and identified requirements for improved simulants in CB defense materiel development. Initiated a program of small-quantity synthesis for defensive RDT&amp;E, toxicology screening, and characterization of new threat materials (to include persistence properties of novel agents) identified as urgent needs while continuing assessment of long-term needs. Initiated validation studies on simulant BG spores, improvement of simulant Erwinia herbicola, exploration of novel "peptide-based" bio simulants, and selection of new simulants for novel chemical agent aerosols. Initiated research on persistence of bacteria and spores. Initiated establishment of an agent/simulant knowledge base technical information system.</li> <li>• 4405 Low Level Operational Toxicology - Completed miosis threshold studies for second generation agents in rats over extended exposure durations. Completed GF and GB potency ratio studies on rats. Initiated non-rodent animal studies on G agents to support the extrapolation of data to humans. Developed methodology for VX inhalation studies to characterize Ct relationships for low level longer duration exposures. Developed CWA tissue dose metric to quantify exposure and predict toxicological response.</li> </ul>		
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**FY 2002 Accomplishments (Cont):**

- 4177 Environmental Fate of Agents - Prepared the agent fate research program master plan. Completed Phase 1 literature survey of reports relevant to the fate of chemical agents deposited onto surfaces. Converted the surface evaporation database to Oracle and expanded to include additional data for use in model development, calibration, and validation. Developed a stand-alone version of current surface evaporation methodology and used for a parameter sensitivity analysis to better focus agent fate laboratory studies. Developed CHEMRAT as an operational analysis tool using existing surface evaporation methodology and threat scenarios. Draft reports have been completed for the Czech 2000/2001 outdoor field trials, and the Czech 2002 field trials have been performed. Constructed wind tunnel facility in the UK has been constructed and is undergoing characterization testing. Techniques appropriate for live agent laboratory testing have been established. An Oversight Panel review has been supported and responded to.

**Total** 14871

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**FY 2003 Planned Program:**

- 2500 Aerosol Technology - Continue to measure quantitative performance of candidate aerosol collectors for advanced point biological and chemical detection technology, which operates at the Joint Service low temperature requirement (-28 degrees F). Fabricate and test the first brassboards of advanced aerosol inlets to meet Joint Service requirements for high collection efficiency over the respirable particle size range and wind speeds up to 60 mph. Fabricate and test the first brassboards of a new generation of aerosol concentrators and collectors using mini-machining technology to reduce the size, power consumption, and weight of aerosol components in order to meet the stringent requirements for advanced detection systems. Continue to provide controlled biosimulant aerosol challenges and begin providing chemical agent simulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for Technology Readiness Evaluation.

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**FY 2003 Planned Program (Cont):**

- 4350 Threat Agents - Complete the assessment of long-term needs in threat agent data and needs for improved simulants in CB defense materiel development. Participate in a collaborative inter-agency laboratory program to fill data gaps and improve simulants. Continue to synthesize small quantities for defensive RDT&E, toxicologically screen, and characterize identified new threat materials. Identify data gaps for established chemical and biological threat agents. Initiate characterization of fundamental properties of *Y. pestis*. Develop a secure database environment for bioinformatics. Continue assessment of bacteria persistence. Initiate characterization of fundamental properties of a viral family selected by biodefense priorities. Complete research on new simulants for novel chemical threat agents. Continue research on simulant BG spores, exploration of novel "peptide-based" bio simulants, and improvement of simulant *Erwinia herbicola*. Initiate research for a new viral simulant. Continue development of an agent/simulant knowledge base technical information system with emphasis on collection of biological agent and simulant data and quality assessment of chemical and biological agent and simulant data.

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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>5760 Environmental Fate of Agents - Conduct 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 will be completed. Techniques for formulation and dispersal of thickened agent will be established and documented. The surface evaporation database will be completed to include data found by the literature survey and for painted and other surfaces. Laboratory studies, wind tunnel tests, and field trials for live agents on concrete will be performed and documented. Data will address rates of evaporation, ad/absorption, desorption, decay, and droplet spread; chemical adsorption effects on equilibrium; and contact transfer as a function of time. Data analysis, testing, and modeling will be done to correlate wind tunnel flow conditions to those existing in the outdoor boundary layer. A baseline improved surface evaporation inhalation and contact hazard model will be developed. CHEMRAT will use the baseline model and new threat scenarios.</li> </ul> <p><b>Total</b> 12610</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2300 Aerosol Technology - Continue to measure quantitative performance of candidate aerosol collectors for advanced point biological and chemical detection technology, which operates at the Joint Service low temperature requirements (-28 degrees F). Design an omnidirectional inlet that performs satisfactorily under all conditions, including high wind speeds. Optimize design, and begin to fabricate second generation brassboards using mini-machining technologies to reduce size, power consumption, and weight of aerosol components in order to meet the stringent requirements for advanced detection systems. Continue to provide biological and chemical simulant aerosols and expand capability to include wider range of aerosol sizes and feed stocks in preparation for Technology Readiness Evaluation.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 5000 Threat Agents - Publish a Front End Analysis (FEA) based on the prior year assessment of long-term needs in threat agent data and needs for improved simulants in CB defense materiel development. 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 initiate characterization on a second viral family selected by biodefense priorities. Load bioinformatics database with fundamental non-medical properties. 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 environmental impact and toxicology data.
- 5500 Low Level Operational Toxicology Studies - Complete inhalation data sets GF in swine and VX in rodent models. Continue to resolve technological challenges generating and sampling very low concentrations of VX for non-rodent models. Test preliminary dosemetric model in swine for cross route extrapolation.
- 5600 Environmental Fate of Agents - Laboratory studies, wind tunnel tests, and field trials for live agents on asphalt will be performed and documented. Wind tunnel tests and field trials will also be done on live grass. Neat and thickened agent will be used, and decay, equilibrium shifts, droplet spread, absorption rate, and contact transfer will be measured in addition to vapor flux versus time.

**Total** 18400

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**FY 2005 Planned Program:**

- 2600 Aerosol Technology - Continue to measure quantitative performance of candidate aerosol collectors for advanced point biological and chemical detection technology, which operates at the Joint Service low temperature requirements (-28 degrees F). Complete fabrication and test second generation aerosol concentrators and collectors that use mini-machining technology to reduce the size, power consumption, and weight of aerosol components in order to meet the stringent requirements for advanced detection systems. Demonstrate proof of principle hardware for advanced concentrators and collectors using technologies such as acoustic, electrostatic, and micro fiber. Continue to provide controlled biological and chemical simulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for Technology Readiness Evaluation.
  
- 4500 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 *B. mallei* and initiate work on *F. tularensis*. Complete characterization of fundamental properties 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. Initiate characterization of fundamental properties on a viral family selected by biodefense priorities. Continue upgrading the data in the agent/simulant knowledge base technical information system.
  
- 5500 Low Level Operational Toxicology Studies - Complete cross-validation studies for routes of exposure using GB. Develop vapor generation and analytical systems for GD. Initiate VX inhalation data sets in swine.

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

- 5500 Environmental Fate of Agents - Perform laboratory studies for live agents on soil. Wind tunnel tests and field trials will use live agents on brackish water or alternate substrates. Agents and substrates will address data gaps and current threat situations based on periodic program status evaluation. The final surface evaporation model will be completed and used with CHEMRAT and will transition to the Battle Management acquisition programs. An accuracy estimation for model predictions will also be provided based on model performance versus data assembled under this program.

**Total** 18100

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Technology Systems	11801	6301	7492	8000

**FY 2002 Accomplishments:**

- 3393 Bioinformatics - Developed an open source data base with the capacity to acquire genomics (DNA sequencing, DNA array, and genotyping) and proteomics data. Integrated software tools for gathering, statistically assessing and analyzing quantitative proteomics data (from the isotope coded affinity tag [ICAT] approach) in a high throughput proteomic environment. Developed co-precipitation of protein complexes as means to identify protein-protein interactions

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**FY 2002 Accomplishments (Cont):**

- 1808 Battle Management - Conducted Battle Management Front End Analysis (FEA) which identified optimum investment strategy. Completed analysis/and report on tests of non-CB sensors against CB simulant disseminations. Expanded database on non-CB sensor performance through measurement against additional dissemination approaches. Conducted study which assessed value added through data fusion of networked multiple same-type disparate sensors and multiple different disparate sensors.
- 3237 Environment - Completed methodology documentation and validation of VLSTRACK. Increased computational speed and concentration fluctuation representation in next-generation hazard evolution model MESO (small scale used to measure atmospheric motion) with concurrent validation. Improved high resolution computational fluid dynamics model (CBW-CFX) to address realistic droplet size distributions and biological agent decay. Initiated coupling of numerical weather prediction models with existing CB dispersion codes. Initiated refinement of hazard evolution codes to better incorporate effects of the environment on chemical agents.
- 1980 Planning, Training and Analysis - Initiated simulation hazard modeling for systems and forces via distributed simulations systems. Initiated examination of sensitivity of hazard evolution/prediction models for agent toxicity.
- 1383 Simulation Based Acquisition - Identified and planned for highest priority prototyping demonstrations. Initiated coupling of CBD commodity area object models with demonstrated prototyping system. Initiated definition of performance and technical specifications of an eventual virtual prototype system to improve acquisition CBD materiel.

**Total** 11801

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**FY 2003 Planned Program:**

- 1200 Planning, Training and Analysis (DTO-CB43) - Complete and demonstrate initial operational capability of APOD module. Conduct independent Validation and Verification (V&V) of fighter base module. Initiate development and testing of Sea Port of Debarkation (SPOD) module.
- 1664 Environment (DTO-CB55) - Improve next-generation model (MESO) to include wet biological modifications, improve accuracy over rough terrain, and further improvements to boundary layer atmospheric physics. Evaluate performance of computational fluid dynamics model (CBW-CFX) on ships and fixed land structures and identify areas for improvement. Demonstrate performance of coupled weather/CBW dispersion model. Evaluate performance of hazard evolution codes updated by agent environmental effects data.
- 700 Planning, Training and Analysis - Demonstrate HLA or DIS application of hazard models. Conduct statistical analysis of results of agent toxicity load variation in several hazard prediction models for fixed site application.
- 1350 Sim Based Acquisition - Initiate testing of prototyping models against highest priority CBD objects. Develop and demonstrate a breadboard virtual prototype system.
- 1387 Battle Management - Expand studies to address data fusion approaches for multiple sensors. Assess value added at system-level (multiple networked CB sensors and non-CB sensors) through modeling and demonstration. Initiate examination of methods to improve real-time, network-aided decision making, and visualization of network responses.

**Total** 6301

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**FY 2004 Planned Program:**

- 2492 Battle Management - Initiate efforts to optimize data fusion and decision-making across networks and to provide visualization of network sensor responses.
- 2000 Planning, Training and Analysis - Test and finalize Aerial Port of Debarkation (APOD) and Seaport of Debarkation (SPOD) representation. Define Contamination Avoidance for Seaports of Debarkation (CASPOD) data requirements. Populate SPOD representation. Support JOEF Block I demonstration. Perform independent validation and verification on core model. Begin module definition and design for Marine Expeditionary Force HQ, depot and railhead modules.
- 2000 CB 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.
- 1000 Simulation Based Acquisition - Gain user acceptance of next-higher priority CBD object (Bat Mgmt or Protection) and evaluate application of model.

**Total** 7492

**FY 2005 Planned Program:**

- 3500 Battle Management - Continue efforts to optimize data fusion and decision-making across networks and to provide visualization of network sensor responses
- 2500 Planning, Training and Analysis (DTO-CB43) - Test and finalize toward JOEF Block II transition. Develop Marine Expeditionary Force HQ, depot, and railhead modules. Perform internal validation and verification (V&V).

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

- 1500 Environment - 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.
- 500 Simulation Based Acquisition - Evaluate application of prototype model against next-higher priority CBD object.

**Total 8000**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Applied Research	21237	52981	11880	10666

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**FY 2002 Accomplishments:**

- 3500 Bioinformatics - Adapted bioinformatic approaches developed for the human genome project to produce meaningful generalizations about the large number of candidates that can be potentially used for biological threat agents and their varied or engineered properties. Initiated integrating comprehensive and interactive databases maintained and updated with fundamental properties of biological agents of military interest. Initiated development of data mining tools to analyze microbial information specifically tailored to military assessment and decision making for CB defense. Initiated the development of predictive algorithms embedded into databases developed above to understand biological threats, allow generalizations, assess risk of emerging biological threats, and suggest the course of defense response under specific circumstances (e.g., pathogenic genes in unnatural host context or potential threat of engineered genomes).
- 2715 Air Purification Systems - Developed methodology for testing anti-microbial filters/treatments for collective and individual protection. Established R&D contract for reactive filter media. Initiated design of test apparatus to challenge reactive media with biological aerosol simulants. Conducted modeling and testing of lab- and sub-scale anti-microbial air purification devices, which have potential to enhance bio-safety and reduce operating costs associated with air purification.

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**FY 2002 Accomplishments (Cont):**

- 8719 Joint Biological and Chemical Terrorism Response Project - Completed development of rapid anthrax test method for blood and environmental samples initiated in CB countermeasures. Initiated development of rapid test for smallpox and plague. Completed revision of medical training and reference for treatment of chemical and biological exposures for non-military hospitals. Continued development and initial testing of the wide area biological counterterrorism surveillance and detection tool. Developed protocols for safe transport of biologically contaminated clinical samples. Continued development and initial testing of a transportable fiber optic detector for a wide variety of biological threat agents found in the field. Continued research into identification of the genetic factors affecting bioterrorism toxicants and toxins. Continued practical recommendations for hospital hygiene practices dealing with bioterrorism. Completed the initial selection of biological and chemical isolation suits for bioterrorism response.
- 970 Common Asset for Biological Security - Developed genome based bioinformatics tools, assessed performance, and applied to gene chip detection/identification technologies.
- 3393 CB Countermeasures - Continued investigations into mechanisms of cell death after exposure to chemical and biological agents. Developed and initiated testing of new, non-woven protective suits for response to chemical and biological threats. Continued investigations into feasibility of employing selenium bound receptors to destroy and eliminate infectious biological agents. Continued development of embedded miniature chemical detectors for employment in critical and sensitive sites.

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**FY 2002 Accomplishments (Cont):**

- 970 Integrated Detection of Energetic and Hazardous Materials (ITMS) - Developed arrays of Cylindrical Ion Traps Mass Spectrometers and the methodologies to analyze the spectra in parallel. Investigated the ITMS methodologies for the point detection of BW agents. Tested the limits of detection via neutron initiated gamma-ray spectroscopy and compared to the theoretical results. Investigated application of advanced transforms on multi-sensor detection models.
- 970 CB Regenerative Air Filtration System - Constructed a facility for toxic and chemical agent testing on one-half scale regenerative pressure/temperature swing adsorption (P/TSA) air filtration devices. A manufacturer supplied a prototype filtration unit. Initiated testing on this unit to identify the performance limits and develop concepts for an optimized design.

**Total** 21237

**FY 2003 Planned Program:**

- 5000 Low Level Operational Toxicology Studies - Complete inhalation data sets to define longer time, lower level operational effects for sarin (GB) in swine and a second generation agent (GF) in rats. Develop a valid marker (dosemetric) for nerve agent exposure suitable for predicting agent effects across species to refine operational human health risk assessment. Complete short-term behavioral and physiological effect studies in rodents using sarin (GB). Extend low-dose exposures to varying durations to assess the potential impact on operational readiness in humans. Initiate integration studies to extend the ability to predict physiological effects across exposure routes and species.
- 3000 Countermeasures to Biological and Chemical Threats - Create and assess innovative strategies for training civilian and military personnel responding to a chemical and biological agent terrorist attack.

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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2000 Polymer Based Chemical and Biological Sensors - Develop and validate polymer based chemical and biological sensor technologies that enhance current state of the art approaches.</li> <li>• 964 Bioinformatics - Create tailored approaches to the extraction and rapid analysis of biological data to enhance the study of chemical and biological threat agent effects.</li> <li>• 4000 Air Purification Collective and Individual Protection - Develop and evaluate filter material formulations for efficacy against biological threat agents.</li> <li>• 2000 Bio-Compact Disk Application Development - Explore and develop bio-compact disk technology.</li> <li>• 1000 Air Containment Monitoring System - Develop systems for contained air monitoring for chemical agents.</li> <li>• 25000 Chem-Bio Defense Initiatives Fund - Develop technologies and methodologies for the rapid detection of, and protection from biological agents utilizing both point and standoff platforms.</li> <li>• 4717 National Consortium for Countermeasures to Biological and Chemical Threats - Develop multiple technologies and implementations to counter the threat of attack using chemical and biological threat agents against civilian and military populations.</li> </ul>		
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>5300 Anthrax Bio Defense Technologies - Develop and commercialize 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. This effort is supported by industry, who will combine its state of the art materials and manufacturing expertise to mass produce real-time, highly sensitive, hand-held bio sensors.</li> </ul> <p><b>Total 52981</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>11880 Non Traditional Agent - Expand and accelerate applied research level of effort to develop advanced countermeasures, detection and protection strategies for non-traditional agents and perform agent fate studies.</li> </ul> <p><b>Total 11880</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>10666 Non Traditional Agent - Continue expansion and acceleration of applied research level of effort to develop advanced countermeasures, detection and protection strategies for non-traditional agents and continue to perform agent fate studies.</li> </ul> <p><b>Total 10666</b></p>		
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	1578	0	0

**FY 2003 Planned Program:**

- 1578 SBIR

**Total** 1578

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	18531	47349	33414	33027	25908	30903	31328	31914	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	11791	11075	4714	5257	4575	4122	3196	3255	Cont	Cont

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	34195	40977	22699	22622	15415	15692	16442	13095	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 technologies, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines); and directed research efforts (Medical Countermeasures, Genetically Engineered Threat Countermeasures, Vaccines, Monoclonal Antibody Based Research, Needle-less Delivery Methods for Recombinant Protein Vaccines, and Organic Vaccine Production).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	16825	17835	11080	10984

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**FY 2002 Accomplishments:**

- 1685 Therapeutics, Bacterial - Optimized and correlated in vitro assays with animal models for selected antibiotic and other therapeutics for bacterial threat agents and examined effects of selected therapies on multiple agent exposures in an animal model. Studied the effect of immunomodulators on the host response to B. mallei and Y. pestis candidate vaccines and identified modulators effective in enhancing candidate vaccines.
- 7270 Therapeutics, Toxin - Initiated structural stabilization and optimization studies on selected lead inhibitors of botulinum neurotoxin and staphylococcal enterotoxin B (SEB) toxin activity; optimized the structure of best peptide-based inhibitor of botulinum neurotoxin serotype A. Tested more than 2,800 compounds for the potential to inhibit botulinum neurotoxin serotype A. Produced and evaluated prototype activity-based assays to screen inhibitors of botulinum neurotoxin serotypes D, E, and F. Applied botulinum neurotoxin activity-based assay technology toward the development of an activity-based assay for inhibitors of anthrax lethal toxin. Refined ex vivo and standardized in vitro screening models for botulinum toxin and SEB intoxication.
- 3370 Therapeutics, Viral - Assessed the potential for immunotherapy against Ebola virus in higher animal species models. Completed investigation of mechanisms of Ebola virus pathogenesis in higher animal species models to characterize promising surrogate markers of efficacy for therapies. Initiated research for development of a variola (smallpox) animal model at the Centers for Disease Control and Prevention (CDC).
- 1500 Therapeutics, Medical Countermeasures - Enhanced applied research efforts toward the development of broad-spectrum therapeutic countermeasures for exposure to various classes of biological threats.

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**FY 2002 Accomplishments (Cont):**

- 3000 Therapeutics, Genetically Engineered Threat Medical Countermeasures - Expanded genetic and protein databases to identify and catalogue the various virulence factors, toxic motifs, and host regulatory proteins responsible for the pathologic effects of biological threat agents. Continued curating the genetic information database, evaluating mechanisms of pathophysiology associated with toxin threats, and developing critical proteomics capability.

**Total** 16825

**FY 2003 Planned Program:**

- 1624 Therapeutics, Bacterial - Evaluate novel antibiotics and other therapeutics in established in vitro assays and animal models. Establish a database of therapeutic profiles for various species of bacterial threat agents.
- 7278 Therapeutics, Toxin - Continue high-throughput assessment of candidate therapeutic inhibitors for botulinum neurotoxin. Complete testing and development of cell-free assay for assessment of candidate therapeutic inhibitors of staphylococcal enterotoxin (SE). Select lead candidate inhibitors based upon results in cell-free and cell-based assays and prepare toxin-inhibitor crystals for x-ray diffraction analysis. Evaluate the outcome of structural stabilization and optimization studies on lead inhibitors of botulinum and SE.
- 1320 Therapeutics, Viral - Continue assessing the potential for immunotherapy against Ebola virus in higher animal species models. Identify pharmacological compounds provided by industry that disrupt filovirus growth in cell culture. Assess therapeutic action of compounds in mouse and higher animal models of filovirus infection. Continue research for development of a variola animal model at CDC.

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**FY 2003 Planned Program (Cont):**

- 1438 Therapeutics, Medical Countermeasures - Accelerate 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. Continue characterizing and refining the smallpox higher animal model for use in determining the effectiveness of post-exposure therapies.
- 2875 Therapeutics, Genetically Engineered Threat Medical Countermeasures - Accelerate research efforts directed toward compiling and prioritizing function-related structural elements that constitute known toxins and virulence factors of biological threat agents. Continue developing integrated databases of protein domains or three-dimensional structural elements identified as virulence factors in biological threat organisms.
- 1000 Therapeutics, Monoclonal Antibody Based Technology - Continue research toward development of a proprietary Heteropolymer (HP) system as a potential therapeutic for acute anthrax intoxication. Conduct in vivo assessment of the HP system in a transgenic mouse strain expressing the human CR-1 receptor on red blood cells. Perform in vivo assessments comparing therapeutic capability of monoclonal antibody 14B7, which has high affinity for anthrax toxin, alone and with the HP system.
- 2300 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - Determine optimum dose of cidofovir in the appropriate higher animal species model using both the lethal pulmonary and lesional infection models with monkeypox. Characterize disease pathogenesis in both animal models. Perform studies to establish the therapeutic window in the variola model developed with the CDC.

**Total** 17835

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**FY 2004 Planned Program:**

- 1495 Therapeutics, Bacterial - Perform additional in vivo studies on efficacy of selected antimicrobial compounds against various bacterial threat agents in small animal models.
- 6450 Therapeutics, Toxin - Initiate testing of lead inhibitors of botulinum neurotoxin and 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.
- 835 Therapeutics, Viral - Continue the assessment for immunotherapy for filoviruses. Identify pharmacological compounds provided by industry that may intervene in filovirus-induced shock. Assess therapeutic action of compounds in mouse models of filovirus infection. Complete research for development of a variola animal model at CDC.
- 2300 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - 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 Food and Drug Administration (FDA) animal efficacy rule.

**Total** 11080

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**FY 2005 Planned Program:**

- 1498 Therapeutics, Bacterial - Perform therapeutic efficacy studies in higher animal species models. Continue studies on selected FDA-licensed antimicrobial compounds to support consideration for changing label indications for use against BW threat agents.
- 6462 Therapeutics, Toxin - Develop surrogate endpoints of human clinical efficacy for botulinum neurotoxin and SE therapeutics. Test combinations of monoclonal antibodies against multiple botulinum neurotoxin serotypes for efficacy using cell-based culture systems.
- 2724 Therapeutics, Viral - Complete the assessment for immunotherapy for filoviruses. Assess therapeutic action of pharmacological compounds provided by industry in mouse and primate models of filovirus infection.
- 300 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - Complete 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.

**Total** 10984

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	5366	6712	4228	4236

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 600 Diagnostics, Common Diagnostic Systems (DTO) - Completed system integration and verification of approaches, reagents, and protocols for portable devices capable of detecting and identifying nucleic acids from a broad range of biological threat agents in clinical specimens.</li> <li>• 4766 Diagnostic Technologies - Continued preparation of diagnostic reagents to enhance the depth and diversity of current approaches for the rapid recognition of infection by potential biological threat agents. Assessed preclinical models and standards for evaluating medical diagnostic systems prior to transition to the regulatory compliant medical laboratory.</li> </ul> <p><b>Total</b> 5366</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 6712 Diagnostic Technologies - Apply new diagnostic approaches to the early recognition of infection, adapting the technologies to current and future comprehensive integrated diagnostic systems. Apply new technological approaches for diagnosis of potential biological warfare threat agents in laboratory studies using relevant clinical samples. Apply new technological approaches for concentrating and processing clinical samples to support rapid biological agent identification. Apply research reagents and associated assays for the detection of appropriate biological markers using relevant clinical samples.</li> </ul> <p><b>Total</b> 6712</p>		
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**FY 2004 Planned Program:**

- 4228 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 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.

**Total** 4228

**FY 2005 Planned Program:**

- 4236 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 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.

**Total** 4236

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Vaccines	12004	15749	7391	7402

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**FY 2002 Accomplishments:**

- 350 Vaccines, Medical Countermeasures for Brucella (DTO) - Tested most efficacious vaccine candidate against Brucella abortus (B. abortus) and B. suis in the mouse lung infection model. Tested efficacy of additional live vaccine candidates against B. melitensis in the mouse lung infection model. Continued to develop and validate in vitro systems in mice and higher animal species to reliably quantify the intensity of potentially protective immune responses and determine the immune system components that eliminate infection with candidate live, attenuated vaccines.
- 200 Vaccines, Medical Countermeasures for Encephalitis Viruses (DTO) - Completed development of higher animal species models for Venezuelan equine encephalitis (VEE) virus type 3A. Redirected eastern equine encephalitis (EEE) and western equine encephalitis (WEE) virus vaccine development back to discovery and focused DTO on a multivalent VEE vaccine candidate.
- 300 Vaccines, Multiagent Vaccines for Biological Threat Agents (DTO) - Completed improvements to the naked DNA and VEE replicon vaccine delivery platforms to optimize their use as multiagent vaccines and combined VEE replicon vaccine platforms for botulinum neurotoxin A, anthrax protective antigen, and Marburg virus into a multiagent vaccine construct.
- 593 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - Evaluated formulations for intranasal, inhalational, and transdermal application of recombinant proteins intended for use as vaccines. Evaluated novel commercial adjuvants in combination with vaccine candidates. Evaluated in animal models, proprietary vaccine delivery devices with commercial partners.
- 230 Vaccines, Recombinant Plague Vaccine Candidate (DTO) - Completed determination of the range of protection of the recombinant plague vaccine candidate against other virulent strains of Yersinia pestis (plague) in animals.

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**FY 2002 Accomplishments (Cont):**

- 500 Vaccines, Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Completed the evaluation of isoform biological activity. Completed the determination of formaldehyde requirement for stable rPA vaccine preparations. Continued to develop the mouse potency assay and determination of the in vitro correlate of immunity for the rPA vaccine candidate. Developed antibodies to rPA in higher animal species to support continuing passive immunity studies. Provided technical summaries to the information package supporting entry of the rPA vaccine into component advanced development.
- 4119 Vaccines, Bacterial - Optimized in vitro correlate assays for candidate vaccines against various bacterial threat agents and evaluated the efficacy of additional novel component vaccine candidates (i.e., fusion proteins and antigen cocktails). Optimized formulation and dosage regime of selected vaccine candidates in animals. Determined whether plasmids expressing foreign genes in a virulent Brucella lead to suitable attenuation and immunogenicity in mice.
- 1840 Vaccines, Toxin - Demonstrated that recombinant vaccine candidates, based on the botulinum toxin heavy chain (Hc) subunit, can elicit protective immunity in mice against neurotoxins produced by various strains of Clostridium botulinum.
- 2372 Vaccines, Viral - Determined that markers of immunity (i.e., antibody) did not correlate with protection against disease from divergent strains of Marburg virus. Developed higher animal species models for western equine encephalitis (WEE) virus.
- 1500 Vaccines - Enhanced applied research toward innovative approaches for the development and delivery of next generation and generation-after-next vaccines and strategies to enhance the immune response to various classes of biological threats.

**Total** 12004

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**FY 2003 Planned Program:**

- 350 Vaccines, Medical Countermeasures for Brucella (DTO) - Determine whether over-expression of vaccine antigens in candidate live vaccines increases protective efficacy. Continue to develop and validate in vitro systems in mice and higher animal species to reliably quantify the intensity of potentially protective immune responses and determine the immune system components that eliminate infection complications following use of live attenuated candidate vaccines.
- 200 Vaccines, Medical Countermeasures for Encephalitis Viruses (DTO) - Complete studies on production of the live, attenuated VEE vaccine virus constructs, their genetic stability, and transmission potential of candidate VEE virus vaccines in competent vector mosquitoes.
- 628 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - Downselect formulations for intranasal, inhalational, and/or transdermal delivery of recombinant protein vaccines. Propose commercial or proprietary device for delivery of vaccines.

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**FY 2003 Planned Program (Cont):**

- 4589 Vaccines, Bacterial - Develop mutants in various agents for in vivo expressed genes to examine role in virulence. Characterize the mechanism(s) of vaccine resistance in selected strains of various agents. Determine mechanisms and correlates of protection with efficacious glanders vaccines. In support of rPA vaccine candidate entry into component advanced development, complete evaluation of immunogenicity and efficacy of rPA isoform species in the rabbit model; continue to develop reagent standards for use in an in vitro potency assay; and complete collection of immune serum for evaluation in a higher animal species passive transfer study. In support of recombinant plague vaccine development, complete development of anti-V antigen competitive enzyme-linked immunosorbent assay (ELISA) and cytotoxicity inhibition assays; complete determination of the range of protection of the vaccine candidate against other virulent strains of *Y. pestis* in animals; and complete studies in mice on alternate vaccine administration routes, dose, formulation and mucosal adjuvants.
  
- 3245 Vaccines, Viral - Assess mechanism of immunity that protects against disease from Ebola virus in lower animal models. Develop assays to measure markers to validate the efficacy of vaccine candidates in established model systems for Ebola virus. Develop higher animal species models for EEE virus.
  
- 1437 Vaccines - Evaluate additional vaccine candidates for delivery using the multiagent delivery platform. Develop virus constructs and obtain commercially produced humanized mouse monoclonal antibodies to evaluate protective immune responses. Investigate the potential of live vaccine candidates for bacterial threat agents.

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**FY 2003 Planned Program (Cont):**

- 1000 Vaccines, Delivery Methods for Recombinant Protein Vaccines - Assess novel, minimally invasive delivery technologies for the administration of protein subunit biodefense vaccine candidates, including recombinant protective antigen and recombinant staphylococcal enterotoxin (SE) B vaccines, and either recombinant SE A vaccine or recombinant F1-V fusion protein plague vaccine.
- 2500 Vaccines, Organic Vaccine Production - Evaluate and determine the usefulness of methods/technologies to develop vaccines through alternative or unconventional means.
- 1800 Vaccines, Ricin Vaccine by Protein Engineering (DTO) - Complete efficacy studies on recombinant ricin toxin A-chain (rRTA) vaccine candidates and downselect to two lead candidates. Scale up process development for rRTA vaccine candidates; conduct analytical test qualification for identity and stability studies of rRTA candidates; and develop potency assay for rRTA vaccine candidates.

**Total** 15749

**FY 2004 Planned Program:**

- 3655 Vaccines, Bacterial - Continue to evaluate potential live-attenuated glanders vaccine candidates in small animal models. Perform preliminary studies in the 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 (i.e., phase 2 clinical trials).

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

- 1632 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.
- 2104 Vaccines, Viral - Initiate applied research to define correlates of immunity that protect against disease from filoviruses (Marburg and Ebola viruses) and from alphaviruses (EEE and WEE viruses).

**Total** 7391

**FY 2005 Planned Program:**

- 3661 Vaccines, Bacterial - Test selected glanders virulence determinants for their ability to elicit protective immunity in a small animal model. Continue applied research studies on development of an acellular brucella vaccine candidate. Continue to perform in vivo studies to support advanced development of the rPA vaccine candidate in its progress toward FDA-licensure.

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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 2005 Planned Program (Cont):**

- 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 for higher animal species ricin vaccine adjuvant studies. Test novel adjuvants with lead ricin vaccine candidate in vivo.
- 2107 Vaccines, Viral - Continue applied research to define correlates of immunity that protect against disease from filoviruses (Marburg and Ebola viruses) and from alphaviruses (EEE and WEE viruses).

**Total** 7402

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	681	0	0

**FY 2003 Planned Program:**

- 681 SBIR

**Total** 681

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BUDGET ACTIVITY <b>RD&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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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34554	35515	49939	44621	39530	39527	42528	38573	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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	17977	19216	17880	18269	19994	20104	20368	21750	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 compounds that will 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 (Pretreatments, Therapeutics, and Diagnostics), and directed research efforts (Low Level Chemical Warfare Agent Exposure, Non-Traditional Agents (NTA), and Mustard Gas Antidote).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Low Level Chemical Warfare Agent Exposure	1000	2000	2500	2500

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1000 Low Level Chemical Warfare Agent (CWA) Exposure - Continued to study biological markers of low dose exposures and investigated selectivity of the markers for CWAs. Evaluated potential genetic and central nervous system perturbations following low level CWA exposures. Initiated studies of the effects of chronic exposure to low doses of CWAs in cellular energy systems and esterases in guinea pig brain. Developed a behavioral component model in guinea pig for studying the effects of low dose chronic exposure to CWAs.</li> </ul> <p><b>Total 1000</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2000 Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO) - Assess 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> </ul> <p><b>Total 2000</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2500 Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO) - 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 chemical warfare agent exposures and on other indices of chemical agent toxicity.</li> </ul> <p><b>Total 2500</b></p>		
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**FY 2005 Planned Program:**

- 2500 Low Level Chemical Warfare Agent Exposure: Effects and Countermeasures (DTO) - Assess VX nerve agent and sulfur mustard (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 higher animal species 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 chemical warfare agent treatments on toxicity at low doses of exposure.

**Total** 2500

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Pretreatments	5633	5387	5810	5511

**FY 2002 Accomplishments:**

- 1000 Pretreatments, Chemical Agent Prophylaxis II (DTO) - Identified sources of human butyrylcholinesterase (HBuChE) for purification. Prepared sufficient amounts of purified HBuChE to test efficacy in two animal models.

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**FY 2002 Accomplishments (Cont):**

- 4633 Pretreatments - Continued investigation of potential transgenic/bioengineered enzyme for production of next generation nerve agent catalytic scavenger. Identified/developed animal models for tests of new scavenger candidate(s). Initiated preliminary efficacy studies with scavengers of nerve agents. Renewed identification of a cyanide pretreatment/treatment compound. Pursued the expression and purification of a recombinant human carboxylesterase for crystallization. Purified a potential pretreatment enzymatic antidote for organophosphate poisoning.

**Total** 5633

**FY 2003 Planned Program:**

- 5387 Pretreatments - Develop physiological pharmacokinetic models of CWAs. Evaluate the safety and circulatory stability of recombinant bioscavengers. Determine specific carbohydrate structures of human serum butyrylcholinesterase for reference material for Good Laboratory Practices (GLP) and current Good Manufacturing Practices (cGMP) production. Generate serum carboxylesterase-deficient mice for use in testing efficacy of nerve agent bioscavengers. Evaluate several classes of compounds that behave by different mechanisms of action, to include methemoglobin formers and sulfur donors, to pursue development of a cyanide pretreatment.

**Total** 5387

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**FY 2004 Planned Program:**

- 5810 Pretreatments - Determine toxicokinetics of CWAs and the impact of pretreatment in guinea pigs. Determine x-ray crystallographic structure of catalytic scavengers.

**Total** 5810

**FY 2005 Planned Program:**

- 5511 Pretreatments - Complete development of transgenic animal model 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.

**Total** 5511

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Non-Traditional Agents	4500	3500	4000	5000

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>4500 Non-Traditional Agents (NTAs) - Assessed the efficacy and prioritized potential approaches for improving the effectiveness of newly proposed nerve agent countermeasures. Evaluated oxime effectiveness against NTAs. Evaluated newly identified anticonvulsants for improved survival after exposure to NTAs. Assessed the effects of in vivo persistence of NTAs on current countermeasure efficacy. Confirmed cardiac pathology seen after exposure to NTAs. Initiated mechanistic studies of oxime reactivation of novel agents-inhibited butyrylcholinesterase. Studied the effectiveness of pretreatment and treatment countermeasures on emerging organophosphorous compounds.</li> </ul> <p><b>Total 4500</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2500 Non-Traditional Agents - Evaluate cardiac toxicity following NTA exposure in cardiac muscle cells and animal models. Consider anti-organophosphate antibodies as an NTA treatment strategy. Evaluate bioscavenger pretreatment as medical countermeasure against NTAs in guinea pigs.</li> <li>1000 Non-Traditional Agents, Improved Oxime (DTO) - Initiate chemical assay development to detect candidate oxime(s) for use against traditional nerve agents and non-traditional agent (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.</li> </ul> <p><b>Total 3500</b></p>		
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<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3000 Non-Traditional Agents - Document cardiac toxicity following NTA exposure in cardiac muscle cells and animal models, and recommend appropriate countermeasures. Continue evaluations of bioscavenger pretreatment as medical countermeasures against NTAs in guinea pigs. Develop surrogate markers for alternative NTA countermeasures in guinea pigs. Determine efficacy of candidate NTA countermeasures in higher animal species.</li> <li>• 1000 Non-Traditional Agents, Improved Oxime (DTO) - 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.</li> </ul> <p><b>Total 4000</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1000 Non-Traditional Agents, Improved Oxime (DTO) - 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.</li> <li>• 4000 Non-Traditional Agents - Continue evaluations of bioscavenger pretreatment as medical countermeasure against NTAs in guinea pigs. Continue studies to determine efficacy of candidate NTAs medical countermeasures in higher animal species. Initiate pre-formulation stability studies of candidate medical countermeasures. Investigate surrogate markers in higher animal species.</li> </ul> <p><b>Total 5000</b></p>		
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	5494	5605	3614	3412

**FY 2002 Accomplishments:**

- 3000 Therapeutics, Medical Countermeasures for Vesicant Agents II (DTO) - Evaluated improved animal models for screening candidate combination therapies for sulfur mustard (HD) exposure. Defined side effects, established adversity levels, and collated available industrial documentation on vesicant countermeasures. In addition, evaluated potential treatments for HD-induced pulmonary injury under controlled conditions. Studied the hairless mouse as a model for evaluating the effectiveness of pretreatments and therapies against cutaneous HD exposure. Tested antagonists of apoptosis and studied their effectiveness in blocking HD-induced cytotoxicity.
  
- 2494 Therapeutics - Developed criteria for evaluating neuronal damage and recovery after status epilepticus. Evaluated improved animal models for screening combinations of anticonvulsant candidate therapies. Determined the potential effect(s) of combinations of anticonvulsants. Determined the essential ingredients for a rinse solution to optimally treat HD-induced ocular injury. Investigated modulation of intracellular calcium as a strategy for protecting against soman-induced seizure related brain damage. Evaluated commercially available licensed wound healing products.

**Total**    5494

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**FY 2003 Planned Program:**

- 1000 Therapeutics, Medical Countermeasures for Vesicant Agents II (DTO) - Identify therapeutic window for administering compounds to mitigate the effects of HD exposure. Evaluate combination therapies for HD exposure in animal models.
- 2505 Therapeutics - Evaluate new Food and Drug Administration (FDA)-approved drugs for treatment of HD-induced ocular injury. Optimize formulation for an ocular rinse that treats HD-induced ocular injury. Evaluate treatments for HD-induced pulmonary injury. Develop experimental protocol to evaluate drugs, drug combinations and drug treatment protocols with potential to control nerve agent-induced seizures. Evaluate ability of midazolam and anticholinergics to terminate nerve agent-induced seizures in a higher animal species model. Evaluate antagonists of apoptosis and the blockade of HD-induced toxicity. Examine modulation of intracellular calcium to protect against soman-induced seizure related brain damage. Develop and test neuroprotectant drugs to protect against status epilepticus following nerve agent exposure. Assess alternate higher animal species as models for nerve agent toxicity and medical countermeasures.
- 2100 Therapeutics, Mustard Gas Antidote - Explore the use of antioxidant liposomes as a medical countermeasure to sulfur mustard agent exposure.

**Total** 5605

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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:**

- 3614 Therapeutics - Determine efficacy of midazolam and anticholinergic drug combinations against seizures and lethality caused by nerve agents. Test FDA-approved drugs shown to be neuroprotective in both anatomic and behavioral studies. Conduct screening of candidate antivesicant compounds. Determine minimal amount of atropine needed to sustain survival in higher animal species exposed to nerve agent. Develop in vitro and in vivo models to support efficacy studies of new antivesicant countermeasures.

**Total 3614**

**FY 2005 Planned Program:**

- 3412 Therapeutics - Define in vitro and in vivo models for study of improved nerve agent countermeasures. Define pharmacological categories for points of intervention in vesicant injury process. Screen potential antivesicant compounds.

**Total 3412**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	1350	2441	1956	1846

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>1350 Diagnostics - Modified cholinesterase testing assay technology to generate diagnostic information on large sample sizes with rapid throughput of samples.</li> </ul> <p><b>Total</b> 1350</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2441 Diagnostics - Pursue development of an ocular device for self-examination of pupillary response to nerve agent exposure. Continue development of analytical methods to measure biological matrices (e.g., blood, urine, tissue) following CWA exposure. Develop confirmatory forensic diagnostic capabilities and rapid screening technology for field applications.</li> </ul> <p><b>Total</b> 2441</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>1956 Diagnostics - Initiate development of diagnostic applications for miniaturized mass spectrometer. Investigate applicability of ocular device for self-examination of pupillary response. Develop diagnostics that can be used to diagnose exposure via respiratory route. Refine analytical methods to measure scopolamine levels in blood and tissue.</li> </ul> <p><b>Total</b> 1956</p>		
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**FY 2005 Planned Program:**

- 1846 Diagnostics - Continue development of diagnostic applications for miniaturized mass spectrometer. Continue to investigate applicability of ocular device for self-examination of pupillary response.

**Total** 1846

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	283	0	0

**FY 2003 Planned Program:**

- 283 SBIR

**Total** 283

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	10672	11470	13199	13489	12571	12644	12818	13058	Cont

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

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

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

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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	80198	107763	103725	98843	85019	89626	89870	86800	Continuing	Continuing
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	18531	47349	33414	33027	25908	30903	31328	31914	Continuing	Continuing
CM3 WMD - CIVIL SUPPORT TEAM (ATD)	4650	2354	2459	2449	2435	2430	0	0	0	16777
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	11791	11075	4714	5257	4575	4122	3196	3255	Continuing	Continuing
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34554	35515	49939	44621	39530	39527	42528	38573	Continuing	Continuing
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	10672	11470	13199	13489	12571	12644	12818	13058	Continuing	Continuing

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

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

**A. Mission Description and Budget Item Justification:** This program element demonstrates technologies that enhance the ability of U.S. forces to defend against, and survive chemical and biological (CB) warfare. This 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.

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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 2002</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 2003 PB)	75266	249842	106003	100922
Current Biennial Budget Estimates (FY 2004/2005)	80198	107763	103725	98843
Total Adjustments	4932	-142079	-2278	-2079
a. Congressional General Reductions	0	-167379	0	0
b. Congressional Increases	0	25300	0	0
c. Reprogrammings	-655	0	0	0
d. SBIR/STTR Transfer	-1273	0	0	0
e. Other Adjustments	0	0	-2278	-2079

**Change Summary Explanation:**

**Funding:** FY02 - Title IX Adjustment (+\$8,200K TB3).

FY03 - Transfer to the Department of Homeland Security Bioterrorism initiatives (-\$162,000K HS3).

FY03 - Adjustment for CBD (+\$22,000K CB3; +\$3,300K TB3) to help fund technology advancements in the areas of chemical and biological agent detection and identification, decontamination, and individual/collective protection.

**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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD)	18531	47349	33414	33027	25908	30903	31328	31914	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 Standoff CW Detection System (ARTEMIS) program, the Joint Service Sensitive Equipment Decontamination (JSSED) Program, the Joint Biological Standoff 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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Detection	467	2642	9601	17200

**FY 2002 Accomplishments:**

- 467 Standoff Detection - Completed testing and evaluation of selected hyperspectral systems.

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<p><b>FY 2002 Accomplishments (Cont):</b>  <b>Total</b>    467</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>•    1200 Lightweight Integrated CB Detection - Continue evaluation and development of DOE's micro chem lab to meet Joint Modular CB detector requirements.</li> <li>•    1442 Point Detection, Detector Modifications - Complete and demonstrate standard operating procedures for wet chemistry test kits and aerosol collectors/samplers as a "quick fix" for new chemical targets. Complete modification of point detection systems to enhance performance against new chemical targets. Continue assessment of modifications on system impacts to power usage, reliability, and overall system life expectancy.</li> </ul> <p><b>Total</b>    2642</p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>•    510 Standoff, Sensor Assessment Non Traditional Agent (NTA) - Complete development of spectral database. Construct breadboard surface contamination monitor.</li> <li>•    1475 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Demonstrate feasibility in an multi-agent, multiplexed PCR assay that will be cost-effective. Complete system design and initiate system build to use multi-agent, multiplexed PCR assay based on analysis of alternative study.</li> <li>•    831 Point Detection, Detector Modifications - Complete assessment of modifications on system impacts to power usage, reliability, and overall system life expectancy.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 2557 Planning, Training and Analysis - Preparation for transition of the fighterbase and casualty modules to Joint Operational Effects Federation (JOEF) program to support Block 1 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 DTRA/CB and TD.
- 492 Environment - Transition VLSTRACK Version 4 capabilities to the JEM Block I and JOEF programs. Continue development of advanced predictive capabilities (MESO). Enhance the ability to analyze transport and flows over complex terrain and around structures such as ships (enhancements include addressing biological agent slurry transport, dusty agent behavior, and complex agent sources and sinks).
- 3736 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.

**Total** 9601

**FY 2005 Planned Program:**

- 3000 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Complete build and demonstrate an automated system for multi-agent, multiplexed PCR assay with automated sample preparation.
- 3000 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Complete build and demonstrate an automated system for multi-agent, multiplexed PCR assay with automated sample preparation.
- 5900 Lightweight Integrated CB Detection - Transition downselected technology to Advanced Concept Development (6.3), design brass boards, and initiate brass board builds. Complete Milestone A.

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

- 300 Point Detection, Integrated Non Traditional Agent ( NTA) - Complete breadboard for integrated sampling.
- 5000 Detection of Agent in Water - Complete prototype build and assessment methodology.

**Total** 17200

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Protection	0	0	295	1400

**FY 2004 Planned Program:**

- 295 Individual Protection, Clothing Non Traditional Agent (NTA) - Incorporate and test improved barrier materials in clothing.

**Total** 295

**FY 2005 Planned Program:**

- 1400 Self-Detoxifying Materials for Clothing Applications (DTO-CB45) - Demonstrate optimized electrospun self-detoxifying membranes, develop prototypes, and conduct field testing. Optimize reactive nanoparticle-polymer material/process and conduct CWA testing. Field test overgarments treated with N-halamines and other oxidative compounds. Transition technology to industry for scale-up to commercial manufacturing.

**Total** 1400

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Decontamination	1847	2000	1180	2000

**FY 2002 Accomplishments:**

- 1847 Sensitive Equipment - Completed Analysis of Alternatives (AOA) for JSSED Blocks II/III. Conducted a thermal decon feasibility study for aircraft and other combat vehicle interiors. Developed a detailed aircraft materials database in support of JSSED Blocks II/III.

**Total** 1847

**FY 2003 Planned Program:**

- 2000 Sensitive Equipment - Complete the validation, verification, and accreditation process for the JSSED Block II/III AOA. Complete an advanced development and management plan for items identified by the AOA and complete TRL 4/5 requirements. Develop MS-B transition documentation.

**Total** 2000

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**FY 2004 Planned Program:**

- 1180 Oxidative Decontamination Formulation (DTO-CB44) - Demonstrate products with existing applicator systems. Modify or develop alternative applicators. Conduct basic integration of products into a "simulated environment". Conduct robust chamber studies using full-scale conceptual system testing with live agents. Conduct an analysis of alternatives for solution chemistry approaches. Complete the validation, verification, and accreditation process for the AOA and complete an advanced development and management plan for items identified.

**Total 1180**

**FY 2005 Planned Program:**

- 2000 Oxidative Decontamination Formulation (DTO-CB44) - Conduct safety, health, and environmental studies. Complete testing IAW the advanced development and management plan developed in FY04. Complete TRL 4/5 requirements.

**Total 2000**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Supporting Science and Technology	0	0	0	200

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**FY 2005 Planned Program:**

- 200 Environment - 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.

**Total**      200

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Information Technology Systems	3695	3500	2262	1200

**FY 2002 Accomplishments:**

- 1036 Chemical and Biological Warfare Effects on Operations (DTO-CB43) - Continued development of a general purpose model of the operations of large fixed-site facilities (air bases, Aerial Ports of Debarkation (APODs) and, Seaports of Debarkation (SPODs)), with the capability to represent chemical and biological warfare (CBW) attacks and their operational impacts. Demonstrated Initial Operational Capability (IOC) for fighter bases.
- 1528 Joint Effects Model (JEM) - Initiated analysis of alternatives and preparation of documentation to support transition to development. Initiated combination of candidate hazard prediction models to single model, and began preparations to demonstrate capability.

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<p><b>FY 2002 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1131 Joint Operational Effects Federation (JOEF) - Initiated Analysis of Alternatives (AoA) and market survey. Established Joint System Architecture IPT and Joint T&amp;E IPT. Initiated creation of the Test and Evaluation Master Plan (TEMP). Began preparation to demonstrate the maturity of the JOEF Blk I federate. Initiated Interoperability Assessment and a System Threat Assessment.</li> </ul> <p><b>Total 3695</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3000 Planning, Training and Analysis - Preparation for transition of the fighterbase and casualty modules to Joint Operational Effects Federation (JOEF) program to support Block 1 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 DTRA/CB and TD.</li> <li>• 500 Environment - Transition VLSTRACK Version 4 capabilities to the JEM Block I and JOEF programs. Continue development of advanced predictive capabilities (MESO). Enhance the ability to analyze transport and flows over complex terrain and around structures such as ships (enhancements include addressing biological agent slurry transport, dusty agent behavior, and complex agent sources and sinks).</li> </ul> <p><b>Total 3500</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 984 Point Detector Modifications Non Traditional Agent (NTA) - Initiate breadboard for integrated sampling, generic classification in unattended mode.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 393 Environment - 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.
- 885 Simulation Based Acquisition - Initiate AoA and market survey for Virtual Prototyping System (VPS).

**Total** 2262

**FY 2005 Planned Program:**

- 500 Planning, Training and Analysis - 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 - Develop Test and Evaluation Master Plan for VPS. Conduct tech demonstration and downselect among technology candidates.

**Total** 1200

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Advanced Tech Development	12522	38513	20076	11027

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**FY 2002 Accomplishments:**

- 1690 Miniaturized CB Detectors (MEMS Technology) - Initiated a feasibility study on the use of chemically modified microspheres to detect the presence of select biological agents. Prototypes were configured as a reader and interchangeable assay cartridges that contains the microspheres.
- 115 Future Threat Agent Studies - Completed stirred reactor kinetic studies of fielded and developmental decontaminants on non-traditional threat agents.
- 10717 Technical Transition - Developed improved sample processing methodologies for UV MALDI-TOF mass spectrometer. Initiated production of upconverting phosphors (UCP) and tickets for test and evaluation. Identified and initiated evaluation of candidate antibodies for specificity and sensitivity against anthrax. Initiated development of catalytic oxidation filtration device. Initiated development of infrared MALDI-TOF mass spectrometer for improved pathogen discrimination. Initiated reformulation and evaluation of Sandia foam for applications to military decontamination. Initiated test and evaluation of Sandia gas microchem lab for vapor agent detection and assessment of fluidic microchem lab for biological detection. Initiated development of improved sample handling technology for incorporation into handheld automated nucleic acid analyzer (HANAA). Assessed performance of anthrax MAGICChip (MicroArray of Gel Impregnated Compounds).

**Total** 12522

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**FY 2003 Planned Program:**

- 750 Standoff Sensor Assessment, Non Traditional Agents (NTA) - Establish infrastructure to develop spectral signature. Develop spectral signature database. Assess optical techniques to detection NTAs.
- 567 Fielded Decontamination Assessment, Non Traditional Agent (NTA) - Complete assessment of fielded decon system for NTAs.
- 2777 Technical Readiness Evaluation - Conduct Technology Readiness Evaluations (TRE) of point and standoff CB detection systems. Conduct contact hazard evaluations using NATO protocols. Conduct off-gas hazard evaluations using NATO/TTCP protocols.
- 12500 Technical Transition - Develop improved sample processing interface for UV MALDI-TOF mass spectrometer and incorporate into DARPA BioTOF device. Complete evaluation of upconverting phosphors for bio identification. Complete evaluation of anthrax-specific antibodies identified in FY02. Evaluate and refine catalytic oxidation filtration device. Initiate development of pathogen agents database with UV/IR MALDI and construct automated sample processing interface. Complete evaluation of Sandia foam for military decon. Complete development of sample handling interface for HANAA. Extend MAGICChip capability to address additional pathogen agents. Initiate assessment of additional technologies in detection, decontamination, and filtration from other government agencies.
- 2119 Miniature Chemical and Biological Detectors - Develop and validate miniaturized chemical and biological threat agent sensor technologies.
- 7700 Rapid Response Countermeasures to Biological and Chemical Threats - Design, test and evaluate rapid response countermeasures to biological and chemical threats.

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**FY 2003 Planned Program (Cont):**

- 3000 CBRN Threat Test Using Public/Private Assets (Sensor Net) - Design and evaluate a sensor network using existing public and private assets that is capable of enhancing the response to chemical/biological/radiological/nuclear threats.
- 2000 Bioterrorism/Agroterrorism Prediction and Risk Assessment - Develop novel strategies and tools to assist in predicting risk from bioterrorism/agroterrorism.
- 3600 Advanced Chemical Detector - Explore and validate an advanced chemical threat agent detector.
- 1400 High Intensity Pulsed Radiation Facility for Chem-Bio Defense - Develop and evaluate the utility of high intensity pulsed radiation for chemical and biological threat remediation.
- 2100 Bioterrorism Defense and Advanced Sensors - Explore and validate the utility of advanced sensor technologies in combating bioterrorism.

**Total** 38513

**FY 2004 Planned Program:**

- 2458 Technical Readiness Evaluation - Conduct Technology Readiness Evaluations (TRE) of point and standoff CB detection systems. Conduct stirred reactor, contact hazard and off gas testing on emerging decontaminants not tested previously.
- 17618 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.

**Total** 20076

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**FY 2005 Planned Program:**

- 1749 Technical Readiness Evaluation - Conduct Technology Readiness Evaluations (TRE) of point and standoff CB detection systems. Conduct stirred reactor, contact hazard and off gas testing on emerging decontaminants not tested previously.
- 9278 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.

**Total** 11027

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	694	0	0

**FY 2003 Planned Program:**

- 694 SBIR

**Total** 694

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<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	1521	3487	0	0	0	0	0	0	0	5008
CA4 CONTAMINATION AVOIDANCE (ACD&P)	15758	19662	35470	7486	2500	2500	12500	2500	Cont	Cont
CO4 COLLECTIVE PROTECTION (ACD&P)	0	4177	5000	0	0	0	0	0	0	9177
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	11791	11075	4714	5257	4575	4122	3196	3255	Cont	Cont
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14720	12763	20623	15075	24381	25516	26075	26597	Cont	Cont
DE4 DECONTAMINATION SYSTEMS (ACD&P)	5986	6634	28243	17886	6816	3880	0	6687	Cont	Cont
IP4 INDIVIDUAL PROTECTION (ACD&P)	13801	0	0	0	0	0	0	0	0	13801

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM3      WMD - CIVIL SUPPORT TEAM (ATD)	4650	2354	2459	2449	2435	2430	0	0	0	16777

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

**Project CM3 WMD - CIVIL SUPPORT TEAM (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 CST) 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 Weapons of Mass Destruction Civil Support Teams (WMD CST) 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 CST knowledge of available local, state and federal resources that can assist in the mitigation of a WMD emergency.

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This program funds the purchase and testing of commercial-off-the-shelf (COTS)/government-off-the-shelf (GOTS) components on the existing Table of Distribution and Allowances (TDA) of Weapons of Mass Destruction Civil Support Teams (WMD CST), and evaluates new commercial products being considered for the WMD CST TDA for performance and ability to meet requirements.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Consequence Management	4650	0	0	0

**FY 2002 Accomplishments:**

- 4650 WMD CST - Consequence Management - Researched detection strategies of bioweapons use in the human population. Gene chip technology was investigated to help determine, in as little as a few hours, if a human was exposed to, and infected by, a biological agent. Tested blood samples to see which specific genes are turned in response to infections by the disease organism.

**Total** 4650

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	0	2319	2459	2449

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**FY 2003 Planned Program:**

- 600 WMD CST- Initiate purchase and evaluate for modification, commercial-off-the-shelf (COTS) components on the Table of Distribution and Allowances (TDA) of the Weapons of Mass Destruction Civil Support Teams (WMD-CSTs).
- 1250 WMD CST - Initiate evaluation of new commercial products being considered for TDA to determine performance and ability to meet WMD CST requirements.
- 469 WMD CST - Initiate planning and support for test program for commercial equipment.

**Total** 2319

**FY 2004 Planned Program:**

- 2000 WMD CST - Continue evaluation of new commercial products being considered for TDA to determine performance and ability to meet WMD CST requirements.
- 459 WMD CST - Initiate targeted technology Analysis of Alternatives for Department of Defense (DoD) civil support to WMD Consequence Management response for follow-on technology insertion options.

**Total** 2459

**FY 2005 Planned Program:**

- 2000 WMD CST - Continue evaluation of new commercial products being considered for TDA to determine performance and ability to meet WMD-CST requirements.
- 449 WMD CST - Continue targeted technology Analysis of Alternatives for Department of Defense (DoD) civil support to WMD Consequence Management response for follow-on technology insertion options.

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**FY 2005 Planned Program (Cont):**  
**Total 2449**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	35	0	0

**FY 2003 Planned Program:**

- 35 SBIR

**Total 35**

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<b>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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)	15758	19662	35470	7486	2500	2500	12500	2500	Cont	Cont
CM5 WMD - CIVIL SUPPORT TEAM (SDD)	0	977	984	14202	390	0	0	0	0	16553
CM6 WMD - CIVIL SUPPORT TEAM (RDT&E MGT SUPPORT)	0	1555	1574	1568	1559	1555	0	0	0	7811
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	25000	18647	7858	2983	43270	1560	0	0	0	99318

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CP3 COUNTERPROLIFERATION SUPPORT (ATD)	11791	11075	4714	5257	4575	4122	3196	3255	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 Department of Defense (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 Chemical and Biological Defense Program. This project funds a variety of programs to defend our forces against WMD, such as the Biological Detection (BIODET) and Counter Proliferation Support (Non-System) (CTP (NS)) efforts, Restoration of Operations (RestOps), Contamination Avoidance at Seaport of Debarkation (CASPOD), and Advanced Concept Technology Demonstrations Planning and Development (ACTD-PD).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ACTD PLANNING AND DEVELOPMENT	1809	1760	4714	5257

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1809 ACTD-PD - Performed technology selections, performed analysis of alternative technologies, and prepared acquisition strategy for Contamination Avoidance for Seaports of Debarkation (CASPOD) Advanced Concept Technology Demonstration.</li> </ul> <p><b>Total 1809</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1760 ACTD-PD - Perform CONOPS evaluation of FY04/05 Modeling and Simulation candidate ACTD. Perform technology demonstration of coupled technologies for FY04/05 candidate ACTD.</li> </ul> <p><b>Total 1760</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1503 ACTD-PD - Perform CONOPS evaluation of FY05 candidate ACTD, prepare planning documents for FY05 candidate ACTD.</li> <li>• 2020 ACTD-PD - Perform technology demonstrations on CB environment simulation technologies for future CB environment simulation for Combatant Commander and Service exercises.</li> <li>• 1191 ACTD-PD - Conduct technology maturity evaluation tests of FY05 ACTD candidate technologies.</li> </ul> <p><b>Total 4714</b></p>		
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**FY 2005 Planned Program:**

- 3757 ACTD-PD - Initiate technology maturity evaluations for selection of technologies for future ACTD candidate.
- 1500 ACTD-PD - Initiate planning for ACTD candidate, explore potential CONOPS with ACTD candidate technologies.

**Total** 5257

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BIODETECTION PROGRAM	0	2208	0	0

**FY 2003 Planned Program:**

- 2208 RestOps - Conduct RestOps ACTD lessons learned study and complete report on RestOps ACTD. Initiate transition planning for technology acquisition from the RestOps ACTD.

**Total** 2208

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
COUNTERPROLIFERATION SUPPORT (NON-SYSTEM)	8194	3408	0	0

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**FY 2002 Accomplishments:**

- 1811 CASPOD - Developed exercise scenarios for CASPOD ACTD. Performed a Table Top Exercise for CB defense of a Seaport for the CASPOD operational sponsor,. Initiated CONOPS development by the operational sponsor of CASPOD ACTD. Performed management support functions for the CASPOD ACTD.
- 2150 RestOps - Demonstrated decontamination procedures for a wide body aircraft at Eglin AFB and demonstrated decontamination applicators using current Aircraft System Program Office (SPO) approved decontaminants and two proposed decontaminants.
- 3686 RestOps - Performed agent transfer and wind tunnel tests for agent studies applicable to procedures used in the RestOps ACTD demonstration. Developed computer-based interactive training tools for the RestOps ACTD. Supported RestOps technology vignette efforts at Osan Air Base and Dugway Proving Ground.
- 547 Joint Service Installation Pilot Project (JSIPP) - Performed assessments on nine installations for the JSIPP project. Modeled locations for biological detection equipment.

**Total** 8194

**FY 2003 Planned Program:**

- 2016 CASPOD - Perform technical testing of technologies for the CASPOD ACTD.
- 867 CASPOD - Develop and test techniques, tactics, and procedures for the use of the CASPOD ACTD technologies. Acquire test equipment, provide test participants and evaluators, develop environmental compliance documentation for tests and preliminary demonstration.

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**FY 2003 Planned Program (Cont):**

- 525 RESTOPS - Perform Large Frame Aircraft Decontamination Demonstration (LFADD) project.

**Total 3408**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
RESTOPS ACTD	1788	3534	0	0

**FY 2002 Accomplishments:**

- 550 RestOps - Continued development of a synthetic environment tool for technology selection in RestOps scenarios.
- 1238 RestOps - Performed evaluation of models to be used in the demonstration of the RestOps ACTD. Developed assessment tools to be used in simulating Biological Warfare for RestOps demonstration.

**Total 1788**

**FY 2003 Planned Program:**

- 3534 RestOps - Complete evaluation of technologies in final demonstration. Transition continues in FY04 to CP4 for residual support projects.

**Total 3534**

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	165	0	0

**FY 2003 Planned Program:**

- 165 SBIR

**Total** 165

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	14720	12763	20623	15075	24381	25516	26075	26597	Cont	Cont

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
TB3 MEDICAL BIOLOGICAL DEFENSE (ATD)	34554	35515	49939	44621	39530	39527	42528	38573	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 transition to Advanced Development. Transitioning candidate vaccines, therapeutics, and diagnostic technologies to Advanced Development requires the development of scientific/regulatory technical data packages to support the Food and Drug Administration (FDA) Investigational New Drug (IND) process and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs); science and technology program areas in medical biological defense (diagnostic technologies, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines), directed research efforts (Bioadhesion Research, Medical Countermeasures, Advanced Diagnostics, Vaccines, and Vaccine Stabilization); and efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	12628	6835	14694	17427

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**FY 2002 Accomplishments:**

- 757 Therapeutics, Bacterial - Evaluated, in animal models, selected immunomodulators in combination with efficacious antibiotics for protection against bacterial threat agents.
- 2711 Therapeutics, Toxin - Evaluated lead candidate licensed therapeutic drugs that also inhibit staphylococcal enterotoxin B (SEB)-induced intoxication.
- 1514 Therapeutics, Viral - Continued evaluating formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox viruses.
- 1146 Therapeutics, Medical Countermeasures - Enhanced advanced technology development of broad-spectrum therapeutic countermeasures for exposure to various biological threats.
- 6500 Therapeutics, Title IX - Expanded collection of blood from anthrax-vaccine-immunized donors and for purification of anthrax-immune globulin (IgG) from collected blood at the Centers for Disease Control and Prevention (CDC) for use in evaluating anthrax-immune IgG as a post-exposure treatment for anthrax. Expanded extramural research to create and characterize human monoclonal antibodies (MAbs) to botulinum neurotoxins (BoNT) as potential therapeutic countermeasures and expanded extramural resources for process development and purification of MAbs identified as lead candidates. Expanded in-house confocal microscopy resources for real-time observation of toxin trafficking in viable cells. Expanded in-house Nuclear Magnetic Resonance capabilities for measurement of the structure of peptide-based therapeutic candidates against BoNT. Resourced an agreement with CDC for higher animal species and related supplies required for pre-clinical studies of cidofovir as a therapeutic for exposure to orthopox viruses.

**Total** 12628

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**FY 2003 Planned Program:**

- 923 Therapeutics, Bacterial - Conduct comparative assessment for safety and efficacy of immunomodulators and other types of broad-spectrum compounds against multiple bacterial threat agents.
- 3945 Therapeutics, Toxin - Prepare sufficient amounts of lead inhibitors of botulinum toxin and SEB intoxication for testing ex vivo or in vivo. Evaluate feasibility of drugs approved by FDA for septic shock as adjunct SE therapeutics using in vitro assays.
- 1767 Therapeutics, Viral - Evaluate the combined approach of antiviral drug therapy and immunotherapy in treatment of disease from filoviruses. Continue evaluating formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox viruses.
- 200 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - Begin 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** 6835

**FY 2004 Planned Program:**

- 2470 Therapeutics, Bacterial - Continue the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in small animal models.
- 8723 Therapeutics, Toxin - Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy for botulinum and SE intoxication. Test FDA-approved drugs for septic shock as adjunct SE therapeutics in vivo.

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

- 3101 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, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - Complete the assessment of the clinical study site to determine feasibility for use in a field trial of cidofovir to treat human monkeypox.

**Total** 14694

**FY 2005 Planned Program:**

- 2890 Therapeutics, Bacterial - Advance the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in higher animal species.
- 10208 Therapeutics, Toxin - Test lead monoclonal antibody therapeutic systems in animal models for effectiveness as passive immunotherapeutics against botulinum neurotoxins. Conduct proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of botulinum neurotoxins or SEs.
- 4029 Therapeutics, Viral - Continue evaluating new drug formulations or prodrugs for orthopox viruses.
- 300 Therapeutics, Therapy for Smallpox and Other Pathogenic Orthopoxviruses (DTO) - Complete technical data package supporting the drug (cidofovir) license holder's request to FDA to approve a labeled indication for pre- and post-exposure treatment for smallpox.

**Total** 17427

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	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
Diagnostics	3532	4070	5323	6149

**FY 2002 Accomplishments:**

- 1000 Diagnostics, Common Diagnostic Systems (DTO) - Completed an analysis of alternatives of portable nucleic analysis systems for detecting and identifying nucleic acids from a broad range of biological threat agents in clinical specimens. Prepared technical data package to support transitioning the common diagnostic systems candidate out of technology base and preparation of a medical device application to the FDA.
- 1611 Diagnostic Technologies - Compared new diagnostic reagents, devices, and protocols in preclinical studies before transitioning to the regulatory compliant medical laboratory. Evaluated candidate diagnostic technologies in field-based studies and in a regulated medical center clinical laboratory prior to transitioning out of technology base. Developed and evaluated new diagnostic assays for biological warfare threat agents and successfully transitioned selected assays out of the technology base. Enhanced advanced medical diagnostic capabilities for presymptomatic detection of biological warfare agent (BWA) infection.
- 921 Diagnostics, Advanced Diagnostics - Enhanced advanced technology development efforts toward the development of advanced medical diagnostic capabilities for early presymptomatic detection of BWA infection.

**Total** 3532

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**FY 2003 Planned Program:**

- 2470 Diagnostic Technologies - Continue comparing alternative diagnostic technologies in laboratory-based and field-based studies prior to transition to the field medical laboratory. Compare 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. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the Joint Biological Agent Identification and Diagnostic System (JBAIDS) acquisition program.
  
- 1600 Diagnostics, Improved Immunodiagnostic Platform (DTO) - Identify immunodiagnostic technology options offering performance and design characteristics capable of addressing operational requirements of the JBAIDS acquisition program. Demonstrate technical capability for detection of at least three biological agents (including toxins) within two hours with the immunodiagnostic technology options. Conduct comparative laboratory evaluation trial of the immunodiagnostic technology options and identify top performing immunodiagnostic platforms based on results of the laboratory evaluation trial.

**Total** 4070

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**FY 2004 Planned Program:**

- 3323 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.
- 2000 Diagnostics, Improved Immunodiagnostics Platform (DTO) - Complete interlaboratory evaluation of top performing immunodiagnostic technology options. Perform a multi-center evaluation trial of the top performing immunodiagnostic platforms and prepare a technical data package detailing results of the multi-center trial. Recommend immunodiagnostic technologies for incorporation into JBAIDS acquisition program.

**Total** 5323

**FY 2005 Planned Program:**

- 6149 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.

**Total** 6149

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	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
Vaccines	12394	10280	9922	11045

**FY 2002 Accomplishments:**

- 1600 Vaccines, Medical Countermeasures for Brucella (DTO) - Prepared pilot lot of lead live attenuated vaccine candidates using processes consistent with the intent of current Good Manufacturing Practices (cGMP) and used the pilot vaccine lot to perform pre-investigational new drug (IND) animal studies. Determined relative efficacy of lead candidates against Brucella melitensis in higher animal species challenge model.
- 800 Vaccines, Medical Countermeasures for Encephalitis Viruses (DTO) - Elicited sufficient cross protective immunity in higher laboratory animals to satisfy Operational Requirements Document (ORD) requirement for immunity against VEE virus types IE. Provided product development support for producing vaccine substrate for anticipated Phase 1 trial. Redirected eastern equine encephalitis (EEE) and western equine encephalitis (WEE) virus vaccine development back to discovery and focused the DTO on a multivalent VEE vaccine candidate.
- 1700 Vaccines, Multiagent Vaccines for Biological Threat Agents (DTO) - Completed testing for safety and efficacy in animal models of candidate products (individually and combined) intended for use in a multiagent vaccine.
- 1205 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - Assessed the quantitative relationships between toxin-specific antibodies or other indicators of immunity in mucosal surfaces and blood. Continued standardization of animal models for evaluating novel adjuvants and vaccine delivery systems.

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**FY 2002 Accomplishments (Cont):**

- 940 Vaccines, Recombinant Plague Vaccine Candidate (DTO) - Performed vaccine efficacy studies in two higher animal species models against aerosol and parental challenges to resolve which is the most appropriate model for demonstrating the protective capability of the vaccine candidate. Continued expanded studies in higher animal species for immunogenicity and passive protection; continued studies to establish a correlate of immunity; and continued to optimize vaccine production and formulation. Incorporated a technical summary of the vaccine candidate into an information package prepared to support entry of the vaccine candidate into component advanced development.
- 1500 Vaccines, Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Investigated enhancement of the rPA vaccine candidate with immunostimulatory compounds. Evaluated rPA-induced protective immunity against diverse geographical isolates of B. anthracis. Conducted experiments to develop a mouse potency assay for the rPA vaccine candidate. Initiated long-term rPA efficacy studies in animal models. Incorporated technical summaries of completed rPA vaccine candidate preclinical studies into information package supporting transition of the candidate out of the technology base.
- 262 Vaccines, Bacterial - Continued to identify and validate correlates of protective immunity against anthrax, plague, glanders, and brucella, in support of selected vaccine candidates.

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**FY 2002 Accomplishments (Cont):**

- 688 Vaccines, Toxin - Continued scaled up production of recombinant botulinum neurotoxin (BoNT) vaccine candidates. Performed formulation studies on a recombinant staphylococcal enterotoxin B (SEB) vaccine candidate. Completed the development of reagents and assays to support process development of recombinant botulinum, ricin, and SEB vaccine candidates. Initiated process development for BoNT vaccine candidates. Supported process development for a SE serotype A (SEA) vaccine candidate and completed efficacy studies. Updated technical data package to support transition of SEA and SEB vaccine candidates out of technology base. Developed mutant recombinant ricin toxin A-chain (rRTA) antigens for potential use as vaccine candidates and initiated animal efficacy studies.
- 1066 Vaccines, Viral - Determined that the Marburg vaccine candidate was unable to protect against divergent strains of Marburg virus. Initiated investigation of other vaccine strategies for the Marburg group of viruses.
- 933 Vaccines - Enhanced advanced technology development and delivery of next-generation and generation-after-next vaccines and strategies, which enhanced the immune response to various classes of biological threats.
- 1700 Vaccines, Title IX - Initiated research to develop a novel three-dimensional cell culture system (Cytomatrix Assay System) that reproduces cellular components required for T-cell mediated immunity and which is intended to provide high-throughput screening capability for evaluating vaccine efficacy prior to initiating animal studies. Purified approximately 200 milligrams each of recombinant protective antigen and recombinant anthrax toxin lethal factor for use as reference standards in anthrax vaccine research. Executed an agreement with the Institute of Medicine and the National Academy of Science to produce a report entitled "Accelerating the Research and Development and Acquisition of Medical Countermeasures against Biological Warfare".

**Total** 12394

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**FY 2003 Planned Program:**

- 1700 Vaccines, Medical Countermeasures for Brucella (DTO) - Demonstrate effectiveness of candidate vaccine in higher animal species challenge model for protective efficacy against a single pathogenic brucella species. Prepare a technical data package supporting transition of the optimum brucella vaccine candidate out of technology base.
- 800 Vaccines, Medical Countermeasures for Encephalitis Viruses (DTO) - Identify final formulation of a trivalent VEE vaccine. Perform formulation and vaccine interference studies for VEE multivalent vaccine (for protection against VEE IA/B, VEE IE, VEE 3A). Perform potency and stability studies on VEE vaccine components. Support development of technical data package that addresses FDA requirements for an Investigational New Drug application and that supports transitioning the multivalent VEE vaccine candidate out of technology base.
- 1102 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - Perform initial efficacy studies for single recombinant protein delivered by alternate route(s). Propose monovalent vaccine formulations for intranasal, inhalational, and/or transdermal delivery systems. Propose in vitro correlate of immunity for surrogate endpoint of clinical efficacy.
- 1000 Vaccines, Recombinant Plague Vaccine Candidate (DTO) - Continue expanded studies in higher animal species for immunogenicity and efficacy and downselect the best higher animal species model. Continue studies to optimize vaccine production and formulation to support entry of the vaccine candidate into component advanced development. Complete a revised technical data package based on completed studies, to facilitate transition of the vaccine candidate out of technology base.

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**FY 2003 Planned Program (Cont):**

- 1774 Vaccines, Bacterial - Initiate a comparison of the safe and most efficacious vaccine candidates against select agent exposures. Analyze study data to determine best glanders vaccine candidate(s). Incorporate data for brucella and plague vaccine candidates into technical data packages for these vaccine candidates. Continue assay support and studies on adjuvants and formulations in support of rPA vaccine candidate entry into component advanced development; continue to evaluate the efficacy of rPA immunity against B. anthracis strains of diverse geographic origins; and continue long-term rPA efficacy studies in rabbits and higher animal species.
- 563 Vaccines, Toxin - Complete process development for botulinum toxin serotypes D and G vaccine candidates in the Pichia yeast system. Support advanced development of recombinant SEB vaccine candidate by transitioning laboratory assays and data out of the technology base.
- 1841 Vaccines, Viral - Test promising vaccine strategies in higher animal species for the ability to protect against filoviruses (Marburg and Ebola viruses). Complete research studies for the development of vaccine candidates for WEE virus.
- 1500 Vaccines, Vaccine Stabilization - Develop procedures/technologies to make vaccines more available.

**Total** 10280

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**FY 2004 Planned Program:**

- 1700 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - Propose formulation/device/route for delivery of combination of multiple recombinant proteins. Perform definitive efficacy studies on monovalent vaccine in second animal model. Evaluate in vitro correlate of immunity.
- 2305 Vaccines, Bacterial - Continue to perform animal studies which support transition of potential vaccine candidates to advanced development. Perform studies to address the mechanism of protective cellular immunity induced by selected vaccine candidates. Continue animal studies supporting phase 2 clinical trials and complete developmental work on the mouse potency assay in support of rPA vaccine candidate development.
- 439 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.
- 3478 Vaccines, Viral - Select the best vaccine candidate based on ability to protect against filoviruses. Continue research for the development of vaccine candidates for EEE virus infection. Test promising vaccine candidates for WEE in animal systems.
- 2000 Vaccines, Ricin Vaccine by Protein Engineering (DTO) - Conduct toxicity assays, activity assays, and efficacy studies for lead recombinant ricin toxin A-chain (rRTA) vaccine candidates. Continue laboratory stability studies of the lead rRTA candidate; initiate higher animal species protocol and model development for evaluating the rRTA candidate.

**Total** 9922

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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:**

- 1700 Vaccines, Alternative Delivery Methods for Recombinant Protein Vaccines (DTO) - 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.
- 2458 Vaccines, Bacterial - Continue to perform animal studies which support phase 1 clinical trials of selected vaccine candidates against bacterial threat agents. Continue technology base studies in support of the development and eventual FDA licensure of the rPA vaccine candidate.
- 1317 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.
- 4070 Vaccines, Viral - Test promising vaccine strategies in higher animal species for ability to protect against filoviruses. Continue research for the development of EEE virus vaccine candidates. Test promising WEE vaccine candidates in higher animal species against WEE virus challenge.
- 1500 Vaccines, Ricin Vaccine by Protein Engineering (DTO) - Complete a comprehensive review potency, efficacy, adjuvant studies, toxicity, and pathology results in rodents and downselect to a single lead recombinant ricin toxin A-chain (rRTA) vaccine candidate for assessment in higher animal species. Conduct efficacy studies in higher animal species with the lead vaccine candidate.

**Total** 11045

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DARPA Transition	4000	12000	20000	10000

**FY 2002 Accomplishments:**

- 4000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Continued expansion and definition of medical biological defense technologies transitioned from DARPA. Initiated studies of a small molecule antibiotic effective against anthrax. Initiated research on a B-cell based diagnostic sensor technology for viral and bacterial pathogens. Initiated studies of a superantigen toxin antagonist and developed a screening assay to identify additional compounds.

**Total** 4000

**FY 2003 Planned Program:**

- 12000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Continue expansion and definition of medical biological defense technologies transitioned from the DARPA. Complete lead optimization of a small molecule antibiotic, complete in vitro and in vivo safety and efficacy studies, and continue Investigational New Drug (IND) enabling studies. Develop two additional B-cell lines and extend the B-cell based diagnostic sensor technology to include toxin agents. Evaluate superantigen toxin antagonists in vitro assays. Use plant expression vectors to create transgenic whole-plant systems expressing plague vaccine antigens. Produce monoclonal antibodies directed against Ebola virus in transgenic plants (plantibodies). Optimize two classes of bacterial RNA-binding compounds with broad-spectrum antimicrobial activity. Apply DNA shuffling technology to identify novel antigens that show protection in mice against at least two encephalitic alphaviruses.

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<p><b>FY 2003 Planned Program (Cont):</b>  <b>Total 12000</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 20000 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 the IND for a small-molecule antibiotic effective against anthrax. Develop four 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 the plant lines and obtain milligram-quantities of plague vaccine antigens from multiple plant species for in vivo evaluation. Obtain milligram-quantities of Ebola plantibodies for in vitro and in vivo evaluation. Complete lead optimization of bacterial RNA-binding compounds and conduct in vitro and in vivo evaluation of the most effective compounds. Evaluate DNA vaccines developed from the most cross-reactive antigens, obtained through DNA shuffling, in higher animal species for protection against three encephalitic alphaviruses.</li> </ul> <p><b>Total 20000</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 10000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Conclude characterization and process development of candidate vaccines, therapeutics, and diagnostic technologies mature enough for transition into advanced 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.</li> </ul> <p><b>Total 10000</b></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>	PROJECT <b>TB3</b>
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Bioadhesion Program	2000	1800	0	0

**FY 2002 Accomplishments:**

- 2000 Bioadhesion Research Program - Continued to evaluate mechanisms that block the adhesion of pathogens to host cells thereby preventing infection or intoxication. Defined protective epitopes and novel delivery systems for use in vaccine formulations focusing on bioadhesion. Used phage display peptide libraries to identify peptide mimetics and constructed vaccine candidates consisting of covalent conjugates and nanoparticles displaying those peptide mimetics. Characterized immune responses in humans exposed to inhalation and cutaneous anthrax to identify the most immunogenic epitopes. Used microarray technology to characterize the genetic response profiles of vaccinated and/or BWA challenged animals leading to effective immunity.

**Total** 2000

**FY 2003 Planned Program:**

- 1800 Bioadhesion Research to Combat Biological Warfare - Generate recombinant anthrax antigens, native protective antigen, lethal factor, and capsular antigens and develop conjugate vaccine formulations. Construct covalent conjugates and nanoparticles displaying various combinations of anthrax antigens and determine immunogenicity in animals. Conjugate various combinations of anthrax toxins and capsular materials and determine the optimal conjugate for generating protective immune responses.

**Total** 1800

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	530	0	0

**FY 2003 Planned Program:**

- 530 SBIR

**Total** 530

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	68596	40536	68008	28968	45255	38601	18800	9540	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	45032	43621	5880	3087	3653	14961	58971	71758	Cont	Cont

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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development (ATD)</b>				<b>PE NUMBER AND TITLE</b> <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)</b>				<b>PROJECT</b> <b>TC3</b>	
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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
TC3 MEDICAL CHEMICAL DEFENSE (ATD)	10672	11470	13199	13489	12571	12644	12818	13058	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 antidotes, pretreatment drugs, and topical skin protectants to protect U.S. forces against known and emerging CW 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 compounds. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas (Pretreatments, Therapeutics, and Diagnostics), and directed research efforts (Low Level Chemical Warfare Agent Exposure and Non-Traditional Agents).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Low Level Chemical Warfare Agent Exposure	0	0	500	1500

**FY 2004 Planned Program:**

- 500 Low Level Chemical Warfare Agent Exposure - Correlate available data relating to low dose chemical warfare agent (CWA) exposure into a functional database suitable for predicting human toxicity.

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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):**

**Total**    500

**FY 2005 Planned Program:**

- 1500    Low Level Chemical Warfare Agent Exposure - Complete evaluation and recommend potential treatments for low level chemical exposure. Demonstrate surrogate marker(s) to confirm low level chemical exposure. Complete database for predicting human toxicity resulting from low level CWA exposure.

**Total**    1500

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Non-Traditional Agents	1500	2000	5000	5500

**FY 2002 Accomplishments:**

- 1500    Non-Traditional Agents (NTAs) - Initiated downselection process of best available countermeasure(s) against NTAs. Initiated formulation and bulk production feasibility studies for countermeasures. Planned expedited effort to identify and characterize effective new cholinesterase reactivator compounds effective against NTAs. Initiated synthesis of new cholinesterase reactivator compounds for testing. Planned higher animal species study to establish effectiveness of new oxime.

**Total**    1500

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<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 800 Non-Traditional Agents - Compare all nerve agents for induction of neurochemical changes. Evaluate efficacy of anticonvulsants against NTAs.</li> <li>• 1200 Non-Traditional Agents, Improved Oxime (DTO) - Conduct efficacy studies of candidate oxime(s) against traditional nerve agents and NTAs in guinea pigs. Initiate down selection process. Synthesize appropriate quantities of each oxime for required studies.</li> </ul> <p><b>Total 2000</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1000 Non-Traditional Agents - Evaluate candidate anticonvulsants for effective dose, time to terminate seizures, and neurochemical changes following NTA exposure.</li> <li>• 4000 Non-Traditional Agents, Improved Oxime (DTO) - Initiate efficacy and pharmacokinetic (PK) studies of candidate oxime(s) for use against traditional nerve agents and NTAs in higher animal species and safety/toxicity studies in two species. Continue the down selection process.</li> </ul> <p><b>Total 5000</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 500 Non-Traditional Agents - Continue to evaluate candidate medical countermeasures to treat NTA exposure.</li> </ul>		
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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 2005 Planned Program (Cont):**

- 5000 Non-Traditional Agents, Improved Oxime (DTO) - 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 requirements for an Investigational New Drug (IND) application and for transition of the best improved, broad-spectrum candidate oxime(s) out of the technology base.

**Total    5500**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Pretreatments	3838	2128	3352	3107

**FY 2002 Accomplishments:**

- 1300 Pretreatments, Active Topical Skin Protectant (aTSP) (DTO) - Completed aTSP formulation studies and demonstrated efficacy against estimated exposure levels of chemical warfare agents (CWAs). Selected candidate(s) for transition out of technology base. Developed an M8 chemical agent paper test to evaluate effectiveness of topical skin protectant after challenge with CWAs. Developed and utilized a spectrophotometric method for proof of decontamination of the aTSP. Evaluated the efficacy of candidate aTSPs against cutaneous vapor and liquid sulfur mustard (HD).

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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 2002 Accomplishments (Cont):**

- 1000 Pretreatments, Chemical Agent Prophylaxis II (DTO) - Established higher animal species models to evaluate lead scavengers for safety and efficacy. Pursued development of behavioral safety testing procedures in higher animal species for chemical defense prophylactics. Evaluated and characterized enzyme identified as candidate for transition out of the technology base. Studied the effects of pretreatment with human butyrylcholinesterase scavengers on the toxicokinetics and binding of chemical warfare nerve agents in guinea pigs and higher animal species. Completed program studies and initiated preparation of a technical data package to address Food and Drug Administration (FDA) requirements for an Investigational New Drug (IND) application that supports transition out of the technology base.
- 1538 Pretreatments - Completed development/validation of a process capable of producing sufficient amounts of enzyme scavenger material for clinical trials. Studied safety and efficacy of catalytic scavenger candidates. Conducted pharmacology and toxicology studies on candidate compounds. Continued physiological pharmacokinetic studies of the catalytic scavengers identified (carboxylesterase and paraoxonase-1).

**Total** 3838

**FY 2003 Planned Program:**

- 2128 Pretreatments - Complete physiological pharmacokinetic model studies of expected human efficacy with various catalytic scavengers. Verify adequacy of transgenic animal model to produce recombinant catalytic enzyme scavenger.

**Total** 2128

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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:**

- 3352 Pretreatments - Initiate evaluation of human protein catalytic scavenger. Utilize transgenic animal model to produce adequate amounts of recombinant catalytic enzyme scavenger for pre-clinical testing.

**Total** 3352

**FY 2005 Planned Program:**

- 3107 Pretreatments - Complete evaluation of human protein catalytic scavenger as a nerve agent countermeasure. Initiate preparation of technical data package for transition out of the technology base.

**Total** 3107

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Therapeutics	5003	6826	3626	2712

**FY 2002 Accomplishments:**

- 2000 Therapeutics, Medical Countermeasures for Vesicant Agents II (DTO) - Studied combination therapy approaches to provide protection in animal models. Conducted pharmacokinetic and formulation studies of vesicant countermeasure candidates. Initiated collection of pre-clinical data that will allow a preliminary safety assessment of toxicokinetics (TK) and absorption, distribution, metabolism, and excretion (ADME) of proposed treatments.

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<p><b>FY 2002 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>3003 Therapeutics - Determined optimal midazolam anticonvulsant and anticholinergic drug combination and order of administration to obtain maximal anticonvulsant effect against seizures in a higher animal species model. Conducted studies designed to address FDA requirements to license ocular rinse that optimally treats HD-induced injuries. Selected combination therapy approaches that provide highest level of ocular protection and conducted safety and efficacy advanced screening in animal models. Studied efficacy and safety of vesicant countermeasure candidates. Defined pharmacokinetics of anticonvulsant compound for organophosphate-acetylcholinesterase inhibitors. Initiated design of equipment for evaluation of therapeutic agents for pulmonary edema formation in mice following CWA exposure.</li> </ul> <p><b>Total</b> 5003</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>4000 Therapeutics, Medical Countermeasures for Vesicant Agents II (DTO) - Complete preclinical safety and efficacy studies of selected vesicant therapy candidate compounds. Complete pharmacokinetic studies of vesicant countermeasure candidates. Perform additional studies necessary to completely characterize candidate therapy. Transition vesicant therapeutic candidates out of the technology base.</li> <li>2826 Therapeutics - Select optimal anticholinergic drug for inclusion with midazolam anticonvulsant and establish optimal treatment protocol in higher animal species. Complete pre-clinical studies of selected vesicant therapy candidate compounds. Evaluate commercially licensed wound healing medical therapeutics for HD-induced injuries. Evaluate therapeutic agents for pulmonary edema produced by whole-body exposure to CWAs in animal models.</li> </ul> <p><b>Total</b> 6826</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>	PROJECT <b>TC3</b>
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**FY 2004 Planned Program:**

- 3626 Therapeutics - Determine efficacy of midazolam anticonvulsant and anticholinergic drug combinations against seizures and lethality produced by all current threat agents in the guinea pig model. Identify improved clinical strategies, such as skin grafting for HD wounds, for optimal treatment of CWA exposure and CWA contaminated conventional wounds.

**Total** 3626

**FY 2005 Planned Program:**

- 2712 Therapeutics - 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 pharmacokinetic evaluations of selected neuroprotectants, anticonvulsants, and antivesicants.

**Total** 2712

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Diagnostics	331	344	721	670

**FY 2002 Accomplishments:**

- 331 Diagnostics - Continued development of clinical laboratory and hand-held cholinesterase test devices. Evaluated commercially available off-the-shelf wound healing products for HD-induced injuries.

**Total** 331

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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 2003 Planned Program:**
- 344 Diagnostics - Evaluate hand-held cholinesterase monitor for clinical use. Validate immobilized cholinesterases and nerve agent hydrolyzing enzymes as diagnostics for nerve agent exposure.
- Total 344**
- FY 2004 Planned Program:**
- 721 Diagnostics - Develop and test a non-invasive prototype instrument that measures methemoglobin via finger, ear, or toe.
- Total 721**
- FY 2005 Planned Program:**
- 670 Diagnostics - Continue testing of acetylcholinesterase and methemoglobin monitor devices that allow instantaneous monitoring of the warfighter.
- Total 670**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	172	0	0

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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 2003 Planned Program:**

- 172 SBIR

**Total 172**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	1828	1680	4798	9780	4511	4548	4566	4608	Cont	Cont
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1426	1926	1462	1419	7183	7214	7559	6261	Cont	Cont

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

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

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

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

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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	122210	89925	162142	79195	86063	75045	61941	49932	Continuing	Continuing
BJ4 BIOLOGICAL DEFENSE (ACD&P)	1521	3487	0	0	0	0	0	0	0	5008
CA4 CONTAMINATION AVOIDANCE (ACD&P)	15758	19662	35470	7486	2500	2500	12500	2500	Continuing	Continuing
CM4 WMD - CIVIL SUPPORT TEAM (ACD&P)	0	986	0	0	2600	0	0	0	0	3586
CO4 COLLECTIVE PROTECTION (ACD&P)	0	4177	5000	0	0	0	0	0	0	9177
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14720	12763	20623	15075	24381	25516	26075	26597	Continuing	Continuing
DE4 DECONTAMINATION SYSTEMS (ACD&P)	5986	6634	28243	17886	6816	3880	0	6687	Continuing	Continuing
IP4 INDIVIDUAL PROTECTION (ACD&P)	13801	0	0	0	0	0	0	0	0	13801
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	68596	40536	68008	28968	45255	38601	18800	9540	Continuing	Continuing
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	1828	1680	4798	9780	4511	4548	4566	4608	Continuing	Continuing

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Exhibit R-2 (PE 0603884BP)

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</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.</p> <p>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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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><u>FY 2002</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 2003 PB)	89756	144790	102500	69659
Current Biennial Budget Estimates (FY 2004/2005)	122210	89925	162142	79195
Total Adjustments	32454	-54865	59642	9536
a. Congressional General Reductions	0	-59465	0	0
b. Congressional Increases	35800	4600	0	0
c. Reprogrammings	-1826	0	0	0
d. SBIR/STTR Transfer	-1520	0	0	0
e. Other Adjustments	0	0	59642	9536

**Change Summary Explanation:**

**Funding:** FY02 - Title IX Adjustment (+\$35,800K MB4).

FY03 - Transfer to the Department of Homeland Security Bioterrorism initiatives (-\$55,000K HS4) .

FY04/05 - Realignment of funds due to reprioritization of programs within the Chemical Biological Defense Program and to provide for the full funding of high priority developmental efforts.

**Schedule:**

**Technical:**

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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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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)	1521	3487	0	0	0	0	0	0	0	5008

**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 Standoff Detection System (JBSDS) program.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTOR SYSTEM BLK 2	0	2801	0	0
RDT&E Articles (Quantity)	0	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>BJ4</b>
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**FY 2003 Planned Program:**

- 2801 JBPDS BLK 2 - Supports completion upgrade of BAWs Line Replaceable Units (LRU).

**Total** 2801

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TECHNOLOGY TRANSFER FOR BIO SENSORS	1521	636	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 990 TT Bio - Continued system development and integration of the lightweight, early warning, JBSDS system.
- 531 TT Bio - Initiated testing of the integrated, lightweight, early warning JBSDS system.

**Total** 1521

**FY 2003 Planned Program:**

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

**Total** 636

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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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	50	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 50 SBIR

**Total**      50

**UNCLASSIFIED**

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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>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	12428	14308	0	0	0	0	0	0	0	26736
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14720	12763	20623	15075	24381	25516	26075	26597	Cont	Cont
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	44623	72245	0	0	0	0	0	0	0	116868
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	3903	2969	0	0	0	0	0	0	0	6872

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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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**D. Acquisition Strategy:**

JBPDSBLK2      An evolutionary component/suite upgrade acquisition approach will be used to provide the services a common point detection capability for use by all services. The program is structured into two Block EMD phases. Block I EMD provides the services with automated detection and identification of a limited number of BW agents. Block I LRUs (Line Replaceable Units) are being upgraded to be in full compliance to meet objective requirement with the Joint Operational Requirements Document (JORD) Requirement.

TT Bio            Conduct Advanced Component Development and Prototyping (ACD&P) of transitioned DARPA/DOE/DOD advanced biological detection technologies to support evolutionary upgrades to future and legacy biological detection systems. Emphasis will be on technologies that: (1) demonstrate superior performance over current systems; (2) reduce Total Ownership Cost; and (3) maximize horizontal integration. Early focus will be on collector/concentrators, generic detection, early warning, and critical reagents.



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
<b>JBPDSBLK2</b>													
Engineering Support	PO	PM NBCDS, APG, MD	U	0	308	1Q FY03	0	NONE	0	NONE	3578	3886	0
RFP Development and Evaluation	PO	PM NBCDS, APG, MD	U	0	426	1Q FY03	0	NONE	0	NONE	691	1117	0
<b>Subtotal II. Support Costs:</b>													
				0	734		0		0		4269	5003	

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>JBPDSBLK2</b>													
Early Test and Evaluation of Design at Eglin, AFB	PO	SBCCOM, APG, MD	U	0	332	1Q FY03	0	NONE	0	NONE	1435	1767	0
<b>Subtotal III. Test and Evaluation:</b>													
				0	332		0		0		1435	1767	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>	

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>JBPDSBLK2</b>													
PM/MS C - Program/project support	MIPR	PM NBCDS, APG, MD	U	0	140	1Q FY03	0	NONE	0	NONE	0	140	0
<b>TT Bio</b>													
PM/MS S - TT Bio	Various	PEO-CBD, Falls Church, VA	U	325	136	Oct-02	0	NONE	0	NONE	0	461	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	50	1Q FY03	0	NONE	0	NONE	0	50	0
<b>Subtotal IV. Management Services:</b>													
				325	326		0		0		0	651	

Remarks:

<b>TOTAL PROJECT COST:</b>	5434	3487	0	0	10309	19230
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Project BJ4

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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	1Q																															
Complete Development/Hardware Exploration Phase II					1Q	—	3Q																									
IOT&E Egin, AFB							3Q	4Q																								
Whole System Testing Facility Upgrades									1Q	—	4Q																					
TT Bio																																
Initial JBSDS Component Advanced Development	1Q	—	2Q																													
Transition Lightweight, Environmentally Enhanced, and Hardened JBSDS Components into SDD					1Q																											

Project BJ4	Page 12 of 138 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>CA4</b>
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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
CA4 CONTAMINATION AVOIDANCE (ACD&P)	15758	19662	35470	7486	2500	2500	12500	2500	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) Mobile Chemical Agent Detector (MCAD), (5) Nuclear, Biological and Chemical Reconnaissance System (NBCRS) Fox Training System, (6) Joint Service Light Nuclear, Biological, Chemical and Reconnaissance System (JSLNBCRS), and Joint Biological Point Detection System Block II (JBPDS BLK II).

Artemis will be a near-real time, modular, autonomous, active standoff 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 standoff 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 standoff detection capability for platforms such as ground mobile vehicles, ships, rotary wing aircraft, and Tactical Unmanned Aerial Vehicles (TUAV). Block II will also be in a configuration that can be utilized by foot-mobile forces.

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<p>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.</p> <p>JEM will be a general-purpose, accredited software model for predicting Nuclear Chemical and Biological (NBC) 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) and building interiors, and human performance degradation (Block III).</p> <p>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).</p> <p>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.</p>		
Project CA4/Line No: 076	Page 14 of 138 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>CA4</b>
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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 Standoff 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 Improvement Program 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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ARTEMIS - ACTIVE STANDOFF CW DETECTION SYSTEM	8301	10758	7915	2938
RDT&E Articles (Quantity)	0	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>CA4</b>
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**FY 2002 Accomplishments:**

- 1274 ARTEMIS - Prepared draft source documentation for Milestone (MS) B. Maintained document library and information network for all data, research, and other program information. Performed financial management, scheduling, planning, and reporting.
- 990 ARTEMIS - Initiated the development of the systems architecture and draft systems specification through a Joint Systems Engineering (SE) Integrated Product Team (IPT). Initiated initial risk analyses and developed initial risk mitigation plan.
- 446 ARTEMIS - Conducted, as an integral part of the systems engineering process, a supportability analysis. Conducted initial Joint Training Planning Process Methodology (TRPPM) and initiated the develop of an initial Joint System Training Plan (JSTRAP). Began the development of an acquisition logistics support plan for MS B.
- 1351 ARTEMIS - Established draft test strategy and began the development of a test methodology. Began the development of an initial Test & Evaluation Master Plan (TEMP) through a Joint Test & Evaluation (T&E) IPT.
- 3490 ARTEMIS - Continued the development of key components of an active emitter multi-wave Light Detecting and Ranging (LIDAR) technology to develop a system architecture and to reduce overall programmatic risk. Key components considered high risk are solid state lasers, non-consumable detectors, and advanced detection algorithms. Began the demonstration and validation of the performance of these components.
- 750 ARTEMIS - Supported the SE IPT through Simulation Based Acquisition (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.

**Total** 8301

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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 2003 Planned Program:**

- 553 ARTEMIS - Continue to prepare source documentation for MS B and issue draft Request for Proposal (RFP). Maintain document library and information network for all data, research, and other program information. 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.
- 657 ARTEMIS - Continue to develop system architecture, draft system specification, conduct risk analyses and develop risk mitigation plan through a Joint SE IPT.
- 1320 ARTEMIS - Continue test strategy and test methodology development to include simulant to real agent correlation and agent fate. Continue TEMP development through a Joint T&E IPT.
- 3228 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.
- 5000 ARTEMIS - Support the development of standoff detection test infrastructure to provide the capability to adequately test the Artemis system. Develop an active standoff chamber fixture for testing the Artemis system against live chemical warfare agents. Develop precise referee systems to support evaluation of the Artemis system in an open air simulant test.

**Total** 10758

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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 2004 Planned Program:**

- 850 ARTEMIS - Update MS B program documentation, conduct MS B decision, and issue final RFP. Maintain document library and information network for all data, research, and other program information. 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.
- 675 ARTEMIS - Finalize system architecture, system specification and risk mitigation plan through a Joint SE IPT.
- 1390 ARTEMIS - Continue test strategy and test methodology development to include simulant to real agent correlation and agent fate. Finalize TEMP through a Joint T&E IPT.
- 5000 ARTEMIS - Funding supports completion of advanced component development and supports the active standoff test infrastructure upgrade.

**Total** 7915

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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 - Conduct source selection and award contract. 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. Maintain document library and information network for all data, research, and other program information. Perform financial management, scheduling, planning, and reporting.
- 450 ARTEMIS - Assist the Source Selection Board (SSB) by conducting technical assessment and evaluate contractor proposal. Conduct System Requirements Review (SRR) with contractor. Continue to conduct risk analyses and implement risk mitigation plan through a Joint SE IPT.
- 875 ARTEMIS - Continue test strategy and test methodology development to include simulant to real agent correlation and agent fate. Integrate contractor into the Joint T&E IPT.
- 800 ARTEMIS - Award contract for the development of Artemis Block I System Development and Demonstration (SDD) system architecture.

**Total** 2938

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTOR SYSTEM BLK 2	0	0	9600	0
RDT&E Articles (Quantity)	0	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>CA4</b>
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**FY 2004 Planned Program:**

- 9600 JBPDS BLK II - Funding supports development and design of a testing methodology and facility to accomplish whole-system live (biological) agent testing (WSLAT) for detection systems. Current capability is limited to component level testing.

**Total** 9600

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Joint Effects Model	0	5120	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 1500 JEM Block I - Complete transition from tech base. Integrate counterforce, passive defense, and hazard/incident software models into a complete system. Develop logistics documentation, initiate Post Deployment Software Support planning, and establish online document library and information network for all data, research, and other program information. Update MS B program documentation and conduct MS B decision. Conduct source selection for development of a standardized hazard prediction model. Perform financial management, scheduling, planning, and reporting.

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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 2003 Planned Program (Cont):**

- 773 JEM Block I - Develop TEMP and Verification, Validation, and Accreditation (VV&A) plan. Complete analysis of existing field test 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) and identify data gaps. Prepare for and conduct Early Operational Assessment (EOA). Initiate Independent Validation and Verification (IV&V) effort. Develop and refine warfighter use cases. Perform engineering analysis and evaluation of software design documentation. Establish and conduct Configuration Control Board (CCB). Continue technical data transition of HPAC, VLSTRACK, and D2PC models.
- 2847 JEM Block I - Award contract for the development of engineering builds (software only) in support of the Block I for transition to the SDD phase.

**Total**    5120

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Joint Operations Effects Federation	0	0	1955	1548
RDT&E Articles (Quantity)	0	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>CA4</b>
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**FY 2004 Planned Program:**

- 726 JOEF Block I - Transition from Advanced Technology Development (ATD) and conduct MS B review. Conduct source selection for development of the JOEF model. Perform financial management, scheduling, planning, and reporting. Initiate Independent Validation and Verification (IV&V). Establish and conduct a CCB.
- 1229 JOEF Block I - Award contract for development of engineering builds to initiate formal development. Develop/update engineering, T&E and logistics documentation. Initiate Post Deployment Software Support (PDSS) planning. Conduct Early Operational Assessment (EOA).

**Total** 1955

**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.

**Total** 1548

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LTWT NBC RECON SYS (JSLNBCRS)	0	0	14500	0
RDT&E Articles (Quantity)	0	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>CA4</b>
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**FY 2004 Planned Program:**

- 14500 JSLNBCRS - Funding supports accelerated development of biological agent 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.

**Total** 14500

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MOBILE CHEMICAL AGENT DETECTOR	6100	2523	0	0
RDT&E Articles (Quantity)	6	0	0	0

**FY 2002 Accomplishments:**

- 2078 MCAD - Initiated evaluation of MCAD to meet operational requirements of all Services and emerging National Defense requirements for remote detection of chemical agents and other hazardous materials. NOTE: Defense Emergency Response Fund (DERF) Enhanced Force Protection - \$616K used in support of MCAD purchase, testing, and evaluation in the National Capital Region (NCR).
- 1500 MCAD - Initiated integration onto a Remote Vehicle.
- 2100 MCAD - Initiated build of six test items at \$350K each.
- 422 MCAD - Initiated Toxic Industrial Chemical algorithm development.

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**FY 2002 Accomplishments (Cont):**  
**Total 6100**

**FY 2003 Planned Program:**

- 2100 MCAD - Continue 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.
- 423 MCAD - Initiate agent testing at Dugway Proving Ground.

**Total 2523**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
RECON SYSTEM, FOX NBC (NBCRS) MODS	1357	971	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 1357 NBCRSBLKI Fox (Training System) - Initiated planning for: equipment design for two Fox Training Systems for U.S. Forces Korea (USFK); initiated the update of the FoxDen at FT Leonard Wood, MO; and continued the fabrication and installation of two trainers at FT Polk, LA.

**Total 1357**

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**FY 2003 Planned Program:**

- 971 NBCRSBLKI Fox (Training System) - Complete the design and installation of two Fox Training Systems at FT Polk.

**Total** 971

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Non Traditional Agent Detection Improvement Program	0	0	1500	3000
RDT&E Articles (Quantity)	0	0	0	0

**FY 2004 Planned Program:**

- 500 NTA - Initiate tradeoff studies for non traditional agents to select and test technologies for detection of non traditional agents which can be used to augment or improve legacy and developmental detection systems.
- 1000 NTA - Initiate the integration of existing selected non-traditional agents technologies into legacy and developmental detection systems. Initiate developmental testing using stimulants and live agents.

**Total** 1500

**FY 2005 Planned Program:**

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

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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 (Cont):**

- 2500 NTA - Continue integration of existing selected non traditional agents technologies into legacy and developmental detection systems. Continue developmental testing using stimulants and live agents.
- 300 NTA - Initiate initial Operational Assessment planning for NTA enhanced detection systems.

**Total 3000**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	290	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 290 SBIR

**Total 290**

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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>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
CA5 CONTAMINATION AVOIDANCE (SDD)	83162	64296	83070	37713	46369	25097	14427	20177	Cont	Cont
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	3442	3428	1949	0	0	0	0	8819
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	4730	0	7459	7651	16742	30711	24300	0	0	91593
JC1500 NBC RECON VEHICLE (NBCRV)	0	16202	23861	18459	24351	7956	0	0	0	90829
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	6926	6297	26981	26364	29506	25309	25700	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	3188	5291	0	0	0	0	0	0	0	8479
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	25878	0	0	0	0	0	0	0	0	25878

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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>C. <u>Other Program Funding Summary (Cont):</u></b>	<b><u>FY 2002</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>
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	4000	27870	44806	65189	72296	79790	38880	38791	Cont	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	4644	4593	0	0	0	0	0	0	0	9237
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	7099	0	15112	22740	38963	43743	43740	44126	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>CA4</b>
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**D. Acquisition Strategy:**

**ARTEMIS**            Develop a system specification and issue a draft Request for Proposal (RFP) for Block I prior to Milestone (MS) B to resolve industry comments. Award a cost-type contract after MS B, for engineering development models in support of the System Development and Demonstration (SDD) phase. Conduct developmental testing and early operational assessments of engineering development models to ensure compliance with the Operational Requirements Document (ORD). After MS C, issue a fixed-fee contract for Low Rate Initial Production (LRIP) units to support Initial Operational Test & Evaluation (IOT&E). A Full Rate Production (FRP) option to this contract will be exercised after FRP Decision Review.

**JBPDSBLK2**            An evolutionary component/suite upgrade acquisition approach will be used to provide the services a common point detection capability for use by all services. The program is structured into two Block EMD phases. Block I EMD provides the services with automated detection and identification of a limited number of BW agents. Block I LRUs (Line Replaceable Units) are being upgraded to be in full compliance to meet objective requirement with the Joint Operational Requirements Document (JORD) Requirement.

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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.
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 JWARS Block I and will provide initial tools & data analysis to support CBD ORMS. Block II will further extend capabilities to include seaports of debarkation (SPODs) & 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 & 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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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. Technical risk is considered low. Cost risk is considered moderate to low. Schedule risk is considered moderate to low. The System Development and Demonstration (SDD) phase is expected to be completed during 4QFY04, with the Full-Rate Production and Deployment phase expected to begin during 1QFY05. A Low Rate Initial Production Contract Award Decision, 14 M1113 HMMWV variants, is anticipated for 1QFY03. Initial Operational Capability (IOC), HMMWV variant, is expected during FY05 and FY06 for LAV. Full Operational Capability (FOC) is anticipated in FY13.</p>	
MCAD	<p>The MCAD program will use a sole-source contract with Northrop Grumman to procure 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 will be conducted as a two-year, Congressionally requested effort. There will be a follow-on program based on the results of testing conducted at Dugway Proving Ground.</p>	
NBCRSBLKI	<p>The Non-developmental item (NDI) program consists of the following phases:</p>	

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(1) Proposal evaluation and shoot-off phase, during which proposals were evaluated, a competition was conducted and a winner was selected; (2) Interim System Production Phase, which provided 48 interim systems, identical to the evaluated shoot-off system selected with certain safety corrections;

(3) System Improvement Phase (SIP) to design, fabricate and test the NBCRS that will satisfy all ROC requirements; (4) Block-1 Modification Phase to produce the improved NBCRS for worldwide fielding by upgrading existing systems to SIP configuration, and (5) Future Block Modification Phases which will incorporate improved chemical and biological detectors. (6) Development and Installation of two Fox Trainers at FT Hood and FT Polk. Trainers operate on virtual terrain and simulate Nuclear, Biological and Chemical threats to allow integrated training of Fox crews. Task order will be added to ITT Industries Inc., contract. FY02 task order awarded to complete installation of two systems at FT Polk, and to begin planning the development of two systems for Korea (USFK), and updating the FoxDen at FT Leonard Wood, MO. FY03 Task Order will be awarded to complete the upgrade of the FoxDen at FT Leonard Wood.

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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 S - System Architecture - Design	C/CPFF	TBS	C	0	0	NONE	0	NONE	600	Jun-05	2678	3278	3278
SW S - System Architecture - Design	C/CPFF	TBD	C	0	0	NONE	0	NONE	200	Jun-05	1887	2087	2087
HW SB - Multiwave LIDAR - Advanced Component Development Task	MIPR	SBCCOM, APG, MD	U	1930	1613	Oct-02	2000	Oct-03	0	NONE	0	5543	3543
SW SB - Multiwave LIDAR - Advanced Component Development Task	MIPR	SBCCOM, APG, MD	U	1235	1115	Oct-02	0	NONE	0	NONE	0	2350	2350
<b>JEM</b>													
SW SB - Engineering Builds - Prototyping, Design and Code	C/CPIF	TBS	C	0	2847	Jan-03	0	NONE	0	NONE	5000	7847	7847
SW SB - HPAC, VLSTRACK & 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	1160	Feb-04	485	Jan-05	0	1645	1645

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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 - Toxic Industrial Chemicals/ Toxic Industrial Materials Software Improvement	MIPR	Oak Ridge National Laboratory, Oak Ridge, TN	U	0	0	NONE	12000	1Q FY04	0	NONE	0	12000	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	700	Jan-03	0	NONE	0	NONE	0	8207	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	TBS	C	0	0	NONE	550	2Q FY04	1800	2Q FY05	0	2350	0
HW S - Technology Downselect Studies - Support	C/CPFF	TBS	C	0	0	NONE	500	2Q FY04	200	2Q FY05	0	700	0
<b>Subtotal I. Product Development:</b>													
				13594	6485		16210		3285		9565	49139	

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

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

PROJECT  
**CA4**

I. Product Development - Cont.

Remarks: NBCRSBLKI - Training systems at FT Polk, LA. FY02 Training Systems planned for Korea and the FoxDen at FT Leonard Wood, MO. Fabrication and integration also include software integration. FY03 upgrade of FoxDen at FT Leonard Wood, MO.

MCAD - Prototype build six systems at \$350K each.

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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>													
ES S - Integrated Product Team - Systems Engineering	MIPR	Various	U	690	619	Oct-02	640	Oct-03	370	Oct-04	1688	4007	4042
ES S - Integrated Product Team - Test and Evaluation and Systems Engineering Support	C/CPFF	Battelle, Arlington, VA	N	300	122	Oct-02	160	Oct-03	160	Oct-04	563	1305	1305
ES S - Integrated Product Team - Joint Test and Evaluation Plan	MIPR	Various	U	615	1236	Oct-02	1265	Oct-03	795	Oct-04	2400	6311	6311
<b>JBPDSBLK2</b>													
ES C - Engineering Support	PO	PM NBCDS, APG, MD	U	0	0	NONE	400	1Q FY04	0	NONE	0	400	0
<b>JEM</b>													
ES S - Integrated Product Team - Joint Test & 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
ES S - Integrated Product Team - Prediction Model Reuse Analysis	MIPR	Various	U	0	205	Oct-02	0	NONE	0	NONE	480	685	685



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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>

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 - Purchase Additional Ground Equipment	MIPR	STRI, Orlando, FL	U	0	1000	Oct-02	2500	Oct-03	0	NONE	0	3500	1000
DTE S - Prototype - Live Agent Active Chamber Fixture	MIPR	STRI, Orlando, FL	U	0	4000	Oct-02	0	NONE	0	NONE	0	4000	4000
OTHT SB - Multiwave LIDAR - Advanced Component Development Tasks	MIPR	SBCCOM, APG, MD	U	500	500	Oct-02	0	NONE	0	NONE	0	1000	1000
<b>JBPDSBLK2</b>													
OTHT S - Development and Design of Test Methodology and Facilities	MIPR	TBS	U	0	0	NONE	9050	1Q FY04	0	NONE	0	9050	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
OTHT S - Hazard Prediction Model - Independent Verification & Validation	C/FFP	TBS	C	0	211	Jan-03	0	NONE	0	NONE	0	211	211
<b>JOEF</b>													
OTHT S - JOEF - Independent Verification & 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

Project CA4	Page 38 of 138 Pages	Exhibit R-3 (PE 0603884BP)
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
JSLNBCRS													
DTE S - CBMS Testing	MIPR	TBS	U	0	0	NONE	2000	3Q FY04	0	NONE	0	2000	0
MCAD													
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	2100	2Q FY03	0	NONE	0	NONE	0	3500	0
NBCRSBLKI													
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
NTA													
DTE C - NTA Enhancement Testing	MIPR	TBS	U	0	0	NONE	250	4Q FY04	750	2Q FY05	0	1000	0
Subtotal III. Test and Evaluation:				2704	8258		13869		750		0	25581	

Remarks: NBCRSBLKI (Training System) - Testing includes software validation, a Limited User Test, and a maintenance evaluation. Trainers are designed and tested uniquely for each installation.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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	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 & Programming	WR	NSWCDD, Dahlgren, VA	U	1201	380	Oct-02	1155	Oct-03	640	Oct-04	7200	10576	10076
PM/MS S - Program Office - Program Support	C/CPFF	Battelle, Arlington, VA	N	742	143	Oct-02	165	Oct-03	143	Oct-04	8100	9293	9293
PM/MS S - Integrated Product Team - Management Team	MIPR	Various	U	100	30	Oct-02	30	Oct-03	30	Oct-04	700	890	890
<b>JBPDSBLK2</b>													
PM/MS C - Program/Project Support	PO	PM NBCDS, APG, MD	U	0	0	NONE	150	1Q FY04	0	NONE	0	150	0
<b>JEM</b>													
PM/MS S - Program Office - Planning & Programming	WR	SPAWARSYSCOM, San Diego, CA	U	150	214	Oct-02	0	NONE	0	NONE	480	844	844
<b>JOEF</b>													
PM/MS SB - Program Office - Planning & Programming	WR	SPAWARSYSCOM, San Diego, CA	U	0	0	NONE	382	Jan-04	360	Jan-05	1600	2342	2342
<b>JSLNBCRS</b>													
PM/MS C - Project/Program Management for CBMS	PO	PM NBCDS, APG, MD	U	0	0	NONE	200	1Q FY04	0	NONE	0	200	0
<b>MCAD</b>													
PM/MS S - Planned Project Support	MIPR	PM NBCDS, APG, MD	U	174	100	2Q FY03	0	NONE	0	NONE	0	274	0

<b>Project CA4</b>	<b>Page 40 of 138 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 2003</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
NBCRSBLKI													
PM/MS S - Program/Project Management	MIPR	PM NBCDS, APG, MD	U	368	71	Oct-02	0	NONE	0	NONE	0	439	0
NTA													
PM/MS S - Support Services	MIPR	Various	U	0	0	NONE	200	1Q FY04	250	1Q FY05	0	450	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	290	1Q FY03	0	NONE	0	NONE	0	290	0
Subtotal IV. Management Services:				2735	1228		2282		1423		18080	25748	

Remarks:

TOTAL PROJECT COST:	22138	19662	35470	7486	41036	125792
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Project CA4

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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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 - Operational Assessment (OA)																																
BLK I - Milestone C Low Rate Initial Production (LRIP)																																
BLK I - Award Low Rate Initial Production (LRIP) Contract / Option																																
BLK I - Low Rate Initial Production (LRIP) Development																																
JBPDSBLK2																																
Analysis of Alternatives/Concept Studies																																
Complete Development/Hardware Exploration Phase II																																
IOT&E Eglin, AFB																																
Whole System Testing Facility Upgrades																																
JEM																																
BLK I - Baseline Review																																
BLK I - Technology Development Decision Review (CB3-TBNM)																																

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE** **PROJECT**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P) CA4**

**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 - Storyboard Development (CB3-TBNM)				4Q				2Q																								
BLK I - Milestone B Decision								3Q																								
BLK I - Award System Development and Demonstration (SDD) Contract								3Q																								
BLK I - Software Development								3Q				3Q																				
BLK I - Early Operational Assessment (EOA)								4Q																								
BLK I - Interim Progress Review												1Q																				
BLK I - Developmental Testing												2Q																				
BLK I - Operational Assessment (OA)												2Q																				
BLK I - Milestone C (Limited Deployment)												3Q																				
BLK I - Production and Deployment												3Q				2Q																
BLK I - Developmental Test (DT)												4Q																				
BLK I - Operational Testing (OT)																1Q																
BLK I - Full Rate Production Review																2Q																

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)** **PROJECT CA4**

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

	FY 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 - Initial Operational Capability (IOC)													2Q																				
BLK I - Post Deployment Software Support													3Q	—————				2Q															
JOEF																																	
Concept & Technology Development Phase				4Q	—————				4Q																								
BLK I - Milestone B									2Q																								
BLK I - Award 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 Decision																				3Q													

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE** **PROJECT**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P) CA4**

**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
JOEF (Cont)																																
BLK I - Initial Operational Capability (IOC)																				3Q												
JSLNBCRS																																
Milestone C Low Rate Initial Production (LRIP)							2Q																									
Development and Testing CBMS II									1Q			4Q																				
MCAD																																
Initiate agent and interference testing						1Q	2Q																									
Initiate urban interference trials							2Q																									
NBCRSBLKI																																
Fox Trainer Hardware Fabrication and Procurement, Fort Polk Systems																																
Fox Trainer Software Development, Fort Polk Systems																																
Fox Trainer Installation at Fort Polk								4Q																								
Fox Trainer System Engineering Study			2Q	3Q																												

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE PROJECT  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P) CA4**

**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
NBCRSBLKI (Cont)																																
Fox Trainer System Dev Task Order (FLW)							2Q																									
NTA																																
Conduct Technology Downselect for NTA Technologies									1Q	2Q																						
Developmental Testing of NTA Technologies									3Q	-----	3Q																					
Integrate NTA Technologies on Selected Systems									3Q	-----	2Q																					
Conduct Planning for Operational Assessment															3Q	4Q																

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM4      WMD - CIVIL SUPPORT TEAM (ACD&P)	0	986	0	0	2600	0	0	0	0	3586

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

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

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	0	972	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 972 WMD CST - Studies in support of WMD CSS operations. Initiate market surveys and testing of PM WMD CS system improvement capabilities.

**Total      972**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	14	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 14 SBIR

**Total** 14

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
CM5 WMD - CIVIL SUPPORT TEAM (SDD)	0	977	984	14202	390	0	0	0	0	16553
CM6 WMD - CIVIL SUPPORT TEAM (RDT&E MGT SUPPORT)	0	1555	1574	1568	1559	1555	0	0	0	7811

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>CM4</b>

**D. Acquisition Strategy:**

WMD CST            This program utilizes multiple acquisition vehicles: 1) This program funds for the acquisition of Chemical and Biological Defense equipment as outlined in the Defense Reform Directive #25 (DRID #25); 2) Uses existing contract vehicles to 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 Operational Test and Evaluation (OT&E) of entire WMD-CST and its equipment in FY03.; 4) Initiate system improvement upgrades in FY03 of Unified Command Suite (UCS) and ALS systems to incorporate technology insertion via to be selected contracts, conduct Developmental Test (DT) and Initial Operational Test and Evaluation (IOTE) of prototype systems and produce system improvement/enhancement upgrades; 5) 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; 6) Continue US Army Reserve (USAR) type-classified chemical biological (CB) equipment refurbishment.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

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
WMD CST													
WMD CST	MIPR	PM NBCDS, APG, MD	U	0	972	1Q FY03	0	NONE	0	NONE	0	972	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	14	1Q FY03	0	NONE	0	NONE	0	14	0
Subtotal IV. Management Services:				0	986		0		0		0	986	

Remarks:

Project CM4

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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TOTAL PROJECT COST:	0	986		0		0		0	986	
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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>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
WMD CST																																
Initiate studies in support of WMD CST operations						2Q		4Q																								

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	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)	0	4177	5000	0	0	0	0	0	0	9177

**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.

The Joint Transportable Collective Protection System (JTCOPS) will use the latest technologies to provide the next generation of lightweight, modular, and self-supporting collective protection shelter systems.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER	0	4116	5000	0
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 Planned Program:**

- 4116 JTCOPS - Prepare for MS B

**Total 4116**

**FY 2004 Planned Program:**

- 5000 JTCOPS - Release a Request for Proposals, evaluate proposals and award a development contract. Begin the design phase of the program.

**Total 5000**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	61	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 61 SBIR

**Total 61**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
CO5 COLLECTIVE PROTECTION (SDD)	8440	4200	2954	2582	4129	4585	2669	2720	Cont	Cont
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	2366	1353	1893	2188	2047	1800	2916	0	0	14563
JN0022 JT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER (JTCOPS)	0	0	0	0	0	0	0	0	0	0

**D. Acquisition Strategy:**

JTCOPS                      JTCOPS will develop a new collective protection capability. A competitive contract will be awarded for the design and prototype fabrication phase, with options for Low Rate Initial Production (LRIP). After successful completion of development testing and the Milestone (MS) B decision, the LRIP option will be exercised to produce systems for Operational Testing (OT). After completion of OT and the MS C decision, the production option of the contract will be exercised.



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>JTCOPS</b>													
ILS S - Integrated Logistic Support Management Activities	MIPR	SBCCOM - Rock Island, IL		40	300	1Q FY03	0	NONE	0	NONE	0	340	0
TD/D S - Integrated Logistics Support Data	C/CPFF	TBS		0	100	1Q FY03	0	NONE	0	NONE	0	100	0
Proposal Evaluations & Design Reviews	MIPR	See Remarks		0	300	1Q FY03	0	NONE	0	NONE	0	300	0
<b>Subtotal II. Support Costs:</b>													
				40	700		0		0		0	740	

Remarks: JTCOPS - Performing Activities & Locations: SBCCOM - Natick, MA; SBCCOM - Edgewood, MD; Brooks AFB - San Antonio, TX; NSWCDD - Dahlgren, VA; MARCORSSYSCOM - Quantico, VA; CECOM - Ft. Belvoir, VA

III. Test and Evaluation: Not applicable

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>JTCOPS</b>													
PM/MS S - Overall Program Management and Integrated Product Team Chair Responsibilities	MIPR	SBCCOM - Natick, MA	U	470	180	1Q FY03	200	1Q FY04	0	NONE	0	850	0
PM/MS SB - Integrated Product Team Participation	MIPR	See Remarks	U	944	210	1Q FY03	220	1Q FY04	0	NONE	0	1374	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	61	1Q FY03	0	NONE	0	NONE	0	61	0
<b>Subtotal IV. Management Services:</b>				1414	451		420		0		0	2285	

Remarks: JTCOPS - Performing Activities & Locations: SBCCOM - Edgewood, MD; Brooks AFB - San Antonio, TX; NSWCDD - Dahlgren, VA; MARCORSSYSCOM - Quantico, VA

<b>TOTAL PROJECT COST:</b>	1454	4177		5000		0		0	10631
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<b>Project CO4</b>	Page 59 of 138 Pages	Exhibit R-3 (PE 0603884BP)
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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
JTCOPS																																
Award Development Contract							3Q																									
Design and Fabricate Prototypes for Development Test (DT)							3Q	4Q																								

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
CP4 COUNTERPROLIFERATION SUPPORT (ACD&P)	14720	12763	20623	15075	24381	25516	26075	26597	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. Joint Vision 2010 states that power projection from the U.S., achieved through rapid strategic mobility and enabled by overseas presence, will likely remain the fundamental concept of our future force. Fixed installations (seaports, aerial ports, logistics nodes, etc.) are critical to this mode of operation and are especially vulnerable to attack with chemical and biological (CB) weapons. 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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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The Restoration of Operations (RestOps) ACTD investigates the impact of technology and CONOPS on restoring operating tempo at an airfield 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 airfield so that the facility can resume functioning with minimal down time. This ACTD will provide technology, software support, and techniques and procedures allowing an air base commander to minimize the impact of a CB attack on military operations.

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).

The Counter-Proliferation Support Program (CPSP) ACTD investigates and demonstrates modeling and simulation technologies that include both computer software and simulation hardware that interfaces with the hardware. This ACTD will support modeling and simulation software for Battlespace Management and provide tools that can transition to either the Joint Effects Model (JEM) or Joint Operational Effects Federation (JEOF) acquisition programs. This ACTD will also investigate and demonstrate technologies that will enable the electronic simulation of a CB environment for training and exercise use.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CONTAMINATION AVOIDANCE AT SEAPORTS OF DEBARKATION (CA	0	5390	13175	2938
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 3344 CASPOD - Conduct Military Utility Assessment (MUA) during the preliminary demonstration at CASPOD selected seaports.
- 974 CASPOD - Conduct scenario development and develop plans for Chemical Biological Port- Defense Tactics, Techniques, and Procedures (TTP) for military users
- 332 CASPOD - Continue CONOPS development, policy initiatives, coordinate exercise and participant involvement, and scenario development.
- 70 CASPOD - Initiate user training on new technologies in preparation for preliminary and final demonstrations. Complete user training for final demonstrations at selected seaports.
- 670 CASPOD - Coordinate and perform CONUS seaport demonstration and conduct evaluation of new technologies.

**Total** 5390

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2004 Planned Program:**

- 4000 CASPOD - Perform Military Utility Assessment (MUA) of CASPOD technologies during the CASPOD final demonstration.
- 4475 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.
- 1200 CASPOD - Initiate transition and residual support planning. Acquire logistic support for initial year of residual phase.
- 1400 CASPOD - Complete Techniques, Tactics, and Procedures for the use of the CASPOD ACTD technologies. Complete training plan and documentation for final demonstration. Conduct program integration tasks.
- 2100 CASPOD - Finalize system integration and system test efforts of sensor, alarm, and warning device hardware with Command and Control software.

**Total** 13175

**FY 2005 Planned Program:**

- 1469 CASPOD - Execute residual support for CASPOD fielded technologies.
- 1469 CASPOD - Complete transition planning, acquire logistics support, and complete logistics support planning.

**Total** 2938

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
COUNTERPROLIFERATION ACTD	0	0	0	12137
RDT&E Articles (Quantity)	0	0	0	0

**FY 2005 Planned Program:**

- 9500 CPSP ACTD - Execute candidate ACTD using Modeling and Simulation technology for battlespace awareness.
- 2637 CPSP ACTD - Execute candidate ACTD for CB environment simulation technologies for Combatant Commander and Service training events and exercises.

**Total** 12137

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
RESTOPS ACTD	14720	7184	7448	0
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2002 Accomplishments:**

- 300 RestOps ACTD - Initiated user training on new technologies for RestOps preparatory and final demonstrations.
- 670 RestOps ACTD - Conducted user preliminary demonstrations at RestOps selected airbase. Conducted policy evaluations associated with RestOps issues at Osan AB.
- 810 RestOps ACTD - Completed procurement of selected technologies for decontamination, detection, protection, medical countermeasures, and sensor integration hardware and software.
- 5672 RestOps ACTD - Continued procurement support, policy initiatives, transition planning, and information technology integration support and program management support.
- 2978 RestOps ACTD - Conducted Limited Utility Assessments (LUA) and developed reports.
- 2690 CASPOD ACTD - Developed management plan, management structure, and methodologies for technology selection analysis, chemical field-test assessment, and operational capability assessment for use during CASPOD. Began procurement on selected decontamination, detection, protection, medical countermeasures and sensor integration equipment/systems for the CASPOD limited utility assessments, preliminary and final demonstrations. Conducted technology selection support, initiated procurement activity support, began policy initiatives, continued information technology integration efforts and initiated planning for the CASPOD technology transition.
- 1600 CASPOD ACTD - Conducted user operational/functional testing for LUA of the CASPOD selected technologies, satisfactorily making it through the Joint Chemical Field Trials.

**Total** 14720

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2003 Planned Program:**

- 515 RestOps ACTD - Complete user training for final demonstrations at selected airbases.
- 2100 RestOps ACTD - Conduct the RestOps final user demonstration on new technologies taking it through the preliminary demonstration.
- 2603 RestOps ACTD - Initiate planning, procurement, and contractor logistics support services for residual support on selected technologies.
- 1049 RestOps ACTD - Finalize policy initiatives and complete information technology integration.
- 917 RestOps ACTD - Develop and complete Military Utility Assessment (MUA) report and complete CONOPS documents.

**Total** 7184

**FY 2004 Planned Program:**

- 2600 RestOps ACTD -Complete procurement, and contractor logistics support services for residual support on selected technologies.
- 4848 RestOps ACTD - Finalize lessons learned, incorporate into ACTD final report, complete service doctrinal changes and Techniques, Tactics, and Procedures changes.

**Total** 7448

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	189	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 189 SBIR

**Total** 189

<b><u>C. Other Program Funding Summary:</u></b>		<u>FY 2002</u>	<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)		1521	3487	0	0	0	0	0	0	0	5008
BJ5 BIOLOGICAL DEFENSE (SDD)		12428	14308	0	0	0	0	0	0	0	26736
JPO210 CRITICAL REAGENTS PROGRAM (CRP)		3903	2969	0	0	0	0	0	0	0	6872
JPO230 PORTAL SHIELD EQUIPMENT		27345	0	0	0	0	0	0	0	0	27345

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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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**D. Acquisition Strategy:**

CPSP ACTD            CPSP ACTD - This project is a generic block description for future ACTD's.

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 2003</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	500	1Q FY04	0	NONE	0	570	0
ILS S - Residual Support	Allot	Army - Army-Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	0	NONE	2938	1Q FY05	0	2938	0
TD/D SB - Conduct final demonstration scenario development	SS/FP	SAIC, Arlington, VA	C	0	974	2Q FY03	0	NONE	0	NONE	0	974	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	2603	2Q FY03	2600	2Q FY04	0	NONE	0	5203	0
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>													
				550	5079		3100		2938		0	11667	

Remarks:

Project CP4

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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	4000	1Q FY04	0	NONE	0	4000	0
OTHT SB - Conduct CONOPS validation	Allot	US Central Command - MacDill AFB, Tampa, FL	U	0	0	NONE	4475	1Q FY04	0	NONE	0	4475	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>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>													
				2590	6446		8475		0		0	17511	

Remarks:

Project CP4

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>CASPOD</b>													
PM/MS S - Perform Program Management Support	C/CPAF	Northrop Grumman IT - Alexandria, VA	C	0	0	NONE	900	1Q FY04	0	NONE	0	900	0
<b>RESTOPS</b>													
PM/MS S - Perform Program Management for RestOps	Allot	DTRA, Alexandria, VA	U	1173	1049	Oct-02	0	NONE	0	NONE	0	2222	0
PM/MS S - Transition Planning	Allot	Air Force - AF Civil Engineer Support Activity, Panama City, FL		0	0	NONE	4848	NONE	0	NONE	0	4848	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	189	1Q FY03	0	NONE	0	NONE	0	189	0
<b>Subtotal IV. Management Services:</b>				1173	1238		5748		0		0	8159	

Remarks:

<b>TOTAL PROJECT COST:</b>	4313	12763		20623		15075		0	52774
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## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)** **PROJECT CP4**

**D. Schedule Profile:**

	FY 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						4Q																				

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
DE4 DECONTAMINATION SYSTEMS (ACD&P)	5986	6634	28243	17886	6816	3880	0	6687	Continuing	Continuing

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

**Project DE4 DECONTAMINATION SYSTEMS (ACD&P):** This ACD&P funding supports Advanced Component 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 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 operational tempo at ports, airfields, logistics nodes, and key command and control centers. The program is divided into four blocks. Block I will field improved decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators and containment systems required to enhance existing decontamination capability. Block III will provide a Food and Drug Administration (FDA) approved skin decontamination capability that includes the capability to decontaminate casualties with open wounds. Block IV will insert technology as it matures to the point of being cost effective to provide substantial enhancement to the warfighters decontamination capability.

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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 system will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment, vehicle/aircraft interiors, and associated cargo, as defined in the draft Joint Service Operational Requirements Document (JSORD) for the JSSED. The JSSED will be a dual technology development program: one technology to decontaminate sensitive items/equipment and a second technology to decontaminate vehicle/aircraft interiors. The JSSED will utilize a three block approach to address individual key capabilities to reduce program risk and support production schedule. Block I will do sensitive equipment/items decontamination; Block II will do aircraft/vehicle interior decontamination; and Block III will do aircraft/vehicle interior decontamination "on-the-move."

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS FAMILY OF DECON SYSTEMS (JSFDS)	2922	0	10971	3958
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 1200 JSFDS - Completed development of standard test operating procedures and the Test and Evaluation Master Plan (TEMP) for Block I decontaminants. Updated program documentation to support a Milestone (MS) B decision.
- 322 JSFDS - Conducted market survey of commercial products that could satisfy Block II applicator and containment systems. Initiated development of Block II systems performance specifications.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</b>
<b>BUDGET ACTIVITY</b> <b>RDT&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>DE4</b>
<b>FY 2002 Accomplishments (Cont):</b> <ul style="list-style-type: none"><li>1400 JSFDS - Evaluated proposals, downselected proposed Block III skin decontamination products to undergo Development Test and Evaluation I (DT I) for selecting the proposals for contract award. Conducted DT I efficacy testing for neutralization and removal of chemical and biological agents. Initiated DT I animal safety studies and preliminary animal efficacy studies.</li></ul> <b>Total 2922</b>		
<b>FY 2004 Planned Program:</b> <ul style="list-style-type: none"><li>789 JSFDS - Finalize TEMP for Block II. Evaluate proposals, conduct system demonstration, and select proposal for contract award. Update program documentation and conduct MS B.</li><li>882 JSFDS - Initiate Market and Technology Transition survey(s) for Block IV efforts to identify solutions for unmet JSFDS requirements including means to expedite casualty process, means to decontaminate Toxic Industrial Materials (TIMs) and additional agents. Develop acquisition strategy to address Block IV.</li><li>2300 JSFDS - Develop a test strategy to downselect Block IV products for Demonstration. Initiate development of standard operating procedures and conduct testing to validate the test methodology for Block IV.</li><li>7000 JSFDS - Funding supports Blk II application systems to develop RFP, conduct industry day, award contract and test commercial products.</li></ul> <b>Total 10971</b>		
Project DE4/Line No: 076		

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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) DE4</b>	PROJECT <b>DE4</b>
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**FY 2005 Planned Program:**

- 1417 JSFDS - Complete development of Block IV standard test operating procedures and testing to validate the test methodology. Prepare program documentation for in process review for Block IV.
- 1941 JSFDS - Evaluate Block IV candidates and conduct testing to downselect for contract award or in-house development efforts. Conduct trade-off analysis to maximize the benefit of the alternative characteristics, product or processes.
- 600 JSFDS - Conduct a limited Operational Assessment (OA) of Block IV candidates to assist in downselection of candidates to take through DT.

**Total    3958**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS SENSITIVE EQUIP DECON	3064	6537	17272	13928
RDT&E Articles (Quantity)	3	8	26	6

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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 2002 Accomplishments:**

- 2714 JSSED - Awarded Block I competitive contract to deliver three system models from selected contractor and investigated design improvements to meet military requirements. Total of three COTS prototypes at \$150K each.
- 350 JSSED - Initiated Block I prototype testing.

**Total** 3064

**FY 2003 Planned Program:**

- 339 JSSED - Complete Block I prototype testing and conduct program Interim Progress Review (IPR) to finalize Block I technology and system design.
- 4770 JSSED - Award Block I contract to develop and fabricate developmental test systems (eight items at \$300K each) which implement design improvements from the prior year COTS prototypes.
- 828 JSSED - Initiate Block I pre-production system test design.
- 500 JSSED - Prepare and submit Block II/III Milestone B documentation, which includes Test and Evaluation Master Plan, System Acquisition Master Plan, and Acquisition Program Baseline.
- 100 JSSED - Prepare Request for Proposal for Block II/III combined development effort.

**Total** 6537

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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>		
<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 5247 JSSED - Continue fabrication of developmental test hardware for Block I (12 test items estimated at \$300K each).</li> <li>• 4300 JSSED - Award Block II system development and demonstration contract.</li> <li>• 925 JSSED - Continue Block I pre-production system test design and methodology development.</li> <li>• 1000 JSSED - Initiate Block II pre-production system test design.</li> <li>• 700 JSSED - Begin Block II prototype build (14 test items estimated at \$50K each).</li> <li>• 5100 JSSED - Funding supports material compatibility testing for all aircraft, ships and vehicles to ensure optimum performance of this decon system.</li> </ul> <p><b>Total 17272</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3000 JSSED - Initiate Block I developmental testing.</li> <li>• 1708 JSSED - Initiate Block I planning for operational testing.</li> <li>• 980 JSSED - Initiate Block I development of acquisition logistics.</li> <li>• 7240 JSSED - Complete Block II prototype build (six systems at \$50K each), system test design, and initiate developmental and operational testing.</li> <li>• 1000 JSSED - Initiate Block II development of integrated logistics support (ILS).</li> </ul> <p><b>Total 13928</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>DE4</b>
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	97	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 97 SBIR

**Total**      97

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
DE5 DECONTAMINATION SYSTEMS (SDD)	2246	4859	11332	3327	5725	5423	9915	4776	Cont	Cont
G47001 MODULAR DECON SYSTEM	4970	4925	5007	4869	4871	0	0	0	0	24642
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)	1882	1966	7374	6441	0	11696	19440	30548	Cont	Cont
JN0018 SORBENT DECON	8530	9405	262	0	0	0	0	0	0	18197

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**D. Acquisition Strategy:**

JSFDS                      The JSFDS program is subdivided into four blocks. Block I though III will provide non-personnel decontaminants, applicators and containment systems, and skin decontaminants. The requirements for these blocks will be met though the use of Commercial-Off-The-Shelf Items/Non-Development Items (COTS/NDI). Block IV will address those requirements that cannot be met with COTS/NDI or that require further definition. All blocks will use full and open competition. Procurement of CENTCOM UNS decontaminant will be made through GSA schedule to ensure availability and configuration management for the interim CENTCOM decontaminant. The Marine Corps will procure and manage the CENTCOM decontaminant inventory from which the Service requirements will be filled. The CENTCOM interim decontaminant will be phased out with the fielding of JSFDS Block I decontaminant.

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

- Block I: Sensitive Equipment/Items Decontamination
- Block II: Aircraft/Vehicle Interior Decontamination
- Block III: Aircraft/Vehicle Interior Decontamination "On-the-Move"

Concurrent Phase 0 for all three Blocks, exploring technologies applicable to one or more areas. Phase 0 for Blocks II and III will take longer to mitigate technical risk associated with less mature technologies.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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Competitive award for Block I and Block II leading to Type Classification. Block III may be a Pre-Planned Product Improvement (P3I) of Block II systems.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>JSSSED</b>													
HW S - Develop Block I Prototype System	C/CPFF	Smith Industries Environ Tech Group, Baltimore, MD	C	1000	1340	Feb-03	1200	1Q FY04	1752	1Q FY05	0	5292	0
SW SB - Fabricate Developmental Test Hardware for Block I	C/CPFF	Smith Industries Environ Tech Group, Baltimore, MD	C	0	2400	Feb-03	3600	Feb-04	0	NONE	0	6000	0
HW S - Develop Block II Prototype System	C/CPFF	TBS	C	0	0	NONE	2400	1Q FY04	3328	1Q FY05	0	5728	0
HW S - Fabricate Developmental Test Hardware for Block II	C/CPFF	TBS	C	0	0	NONE	700	1Q FY04	300	1Q FY05	0	1000	0
<b>Subtotal I. Product Development:</b>				<b>1000</b>	<b>3740</b>		<b>7900</b>		<b>5380</b>		<b>0</b>	<b>18020</b>	

Remarks: JSSSED - Block I FY02-FY03 prototype build, three systems at \$ 150K each

JSSSED - FY03 eight Block I systems at \$ 300K each

JSSSED - FY04 12 Block I systems at \$ 300K each

JSSSED - FY04 14 Block II test items at \$ 50K each

JSSSED - FY05 six Block II test items at \$50K each

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>JSFDS</b>													
OTHT S - Block IV Test Operating Procedures (TOP)	MIPR	Various	U	0	0	NONE	500	1Q FY04	350	1Q FY05	0	850	0
OTHT S - Test Planning Block II	MIPR	Various	U	0	0	NONE	832	1Q FY04	0	NONE	0	832	0
OTHT S - Test Planning Block IV	MIPR	Various	U	0	0	NONE	459	1Q FY04	350	1Q FY05	0	809	0
DTE C - Block IV Developmental Test	MIPR	Various	U	0	0	NONE	700	2Q FY04	500	1Q FY05	0	1200	0
OTE C - Block IV Operational Assessment	MIPR	Various	U	0	0	NONE	0	NONE	600	3Q FY05	0	600	0
DTE C - Block IV Downselect Testing	MIPR	Various	U	0	0	NONE	0	NONE	1121	2Q FY05	0	1121	0
DTE C - Test Block II Commercial Products	C/CPFF	TBS	C	0	0	NONE	6250	2Q FY04	0	NONE	0	6250	0
<b>JSSSED</b>													
OTHT SB - JSSED - Block I Testing	MIPR	Various	U	350	91	2Q FY03	0	NONE	0	NONE	0	441	0
DTE S - Block I Developmental Testing	MIPR	AFOTEC, Kirtland AFB, NM	U	0	0	NONE	0	NONE	1572	2Q FY05	0	1572	0
OTHT S - Block II Developmental and Operational Testing	MIPR	AFOTEC, Kirtland AFB, NM	U	0	0	NONE	0	NONE	1500	2Q FY05	0	1500	0
OTHT S - Test Planning Block I	MIPR	Various	U	0	828	1Q FY03	925	1Q FY04	0	NONE	0	1753	0
OTHT S - Test Planning Block II	MIPR	Various		0	0	NONE	1000	1Q FY04	0	NONE	0	1000	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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 - Integrated Product Team BLOCK I - IV	MIPR	Various	U	0	0	NONE	780	1Q FY04	480	1Q FY05	0	1260	0
<b>JSSSED</b>													
PM/MS S - JSSSED - Service Integrated Product Team Support	MIPR	Various	U	2744	1878	1Q FY03	2347	1Q FY04	1788	1Q FY05	0	8757	0
PM/MS C - Block I Operational Test (OT) Planning	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	0	NONE	1708	2Q FY05	0	1708	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	97	1Q FY03	0	NONE	0	NONE	0	97	0
<b>Subtotal IV. Management Services:</b>				2744	1975		3127		3976		0	11822	

Remarks:

<b>TOTAL PROJECT COST:</b>	4094	6634		28243		17886		2495	59352	
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## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)** **PROJECT**  
**DE4**

**D. Schedule Profile:**

	FY 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																																					
Block II Industry Day									1Q																												
Block II Testing of Commercial Products									2Q	3Q																											
JSSD																																					
Block I Competitive Prototype Contract Award		2Q																																			
Block I Contract Effort (Phase I)		2Q	—		3Q																																
Block I Phase I Prototype Test			4Q	—	2Q																																
Block I Development of Pre-Production Units (Phase II)					2Q	—												4Q																			
Block II/III Milestone B							4Q																														
Block II/III Competitive Prototype Contract									1Q	—												4Q															
Block I Prototype Developmental Testing (DT)										1Q	—		3Q																								
Block I Operational Test															1Q	2Q																					
Block I Milestone C Type Classification																			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>IP4</b>
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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
IP4 INDIVIDUAL PROTECTION (ACD&P)	13801	0	0	0	0	0	0	0	0	13801

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

**Project IP4 INDIVIDUAL PROTECTION (ACD&P):** This project funds System Acquisition 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. JSAM will provide rotary and fixed wing aircrew members with above-the-shoulder CB protection and, when integrated with a Pressure Breathing for G system, will provide anti-G protection in high performance aircraft. JSAM will integrate with existing aircrew life support systems equipment and support equipment.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS AIRCREW MASK (JSAM)	9393	0	0	0
RDT&E Articles (Quantity)	0	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>IP4</b>
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**FY 2002 Accomplishments:**

- 3317 JSAM - Completed PDRR test plans/procedures. The Government evaluated the prototypes for chemical agent permeation, fit factor, positive pressure breathing for altitude, anti-G endurance (centrifuge), air crew life support equipment integration and aircraft interface checks, human factors and environmental factors. Initiated test planning for system demonstration phase.
- 4302 JSAM - Completed contractor qualification test and fabricated prototypes (25 of each variant). Total number of variants and cost per prototype is competition sensitive information. Delivered prototypes to the government for PDRR testing on 30 Jan 2002.
- 1774 JSAM - Continued system engineering and program management activities and support government PDRR prototype testing. Prepared for MS B Interim Progress Review (IPR) and transition to System Development and Demonstration.

**Total** 9393

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS GENERAL PURPOSE MASK	4408	0	0	0
RDT&E Articles (Quantity)	800	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>IP4</b>
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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 700 JSGPM - Completed preparation for Interim Progress Review and transitioned to the System Development and Demonstration acquisition phase. These activities included finalization of the Single Acquisition Management Plan (SAMP), Test and Evaluation Master Plan (TEMP), and the Manpower and Personnel Integration (MANPRINT) Plan.</li> <li>• 1500 JSGPM - Completed the Advanced Component Development and Prototype (ACD&amp;P) contract for mask design and 800 prototypes at \$1500 each. Mask was designed to Joint Service performance specifications with Joint Service input.</li> <li>• 2008 JSGPM - Conducted and completed Engineering Design Test (EDT). Testing ensured meeting Joint Service requirements for protection, communication, drinking, breathing resistance, and weight/bulk limitations.</li> <li>• 200 JSGPM - Completed sustainment study for logistics support.</li> </ul> <p><b>Total</b> 4408</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>IP4</b>
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**C. Other Program Funding Summary:**

		<u>FY 2002</u>	<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>
IP5 INDIVIDUAL PROTECTION (SDD)		15347	38075	42335	20995	5451	972	0	8665	Cont	Cont
JN0011 AERP AIRCRAFT MODS		2818	883	0	0	0	0	0	0	0	3701
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR		2300	3129	0	0	0	0	0	0	0	5429
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)		0	11663	8646	8216	8649	0	0	0	0	37174
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M		1727	1790	0	0	0	0	0	0	0	3517
M99501 MASK, AIRCRAFT M45		3172	994	0	0	0	0	0	0	0	4166
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A		250	1491	0	0	0	0	0	0	0	1741
MA0400 PROTECTIVE CLOTHING		126372	89680	74166	93880	92314	83016	86508	88711	Cont	Cont
MA0480 SECOND SKIN, MASK MCU-2/P		1722	12966	0	0	0	0	0	0	0	14688

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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>											
	<u>FY 2002</u>	<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>	
N00020 CB RESPIRATORY SYSTEM - AIRCREW	3877	3085	0	0	0	0	0	0	0	0	6962

**D. Acquisition Strategy:**

JSAM                      Separate Cost Plus Fixed Fee PDRR contracts were awarded to Gentex and SAIC on 18 July 00. A Full & Open competition was conducted for the SDD effort. Cost Plus Award Fee System Demonstration contract with Fixed Price production options awarded to Scott Aviation on 26 Nov 02. Current quantity requirement is 76,140.

JSGPM                     The JSGPM completed a technical demonstration November 1995. The Concept Evaluation program began 1 October 1998. The Acquisition Strategy (AS) is a combined full scale development (System Development and Demonstration) and production with Contractor Logistics Support (CLS). The AS was approved in October 1998. The contract for development/production is based on a Joint Service performance specification with special emphasis on the lowest total ownership cost. The Developmental Test (DT) and Operational Test (OT) are scheduled to start in April 04, and a Milestone C is scheduled for May 04.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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 & Prototypes	C/CPFF	Avon Inc., Cadillac, MI	C	10766	0	NONE	0	NONE	0	NONE	0	10766	0
Subtotal I. Product Development:				10766	0		0		0		0	10766	

Remarks: JSGPM - 800 prototypes at \$1500 each.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>IP4</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
JSGPM													
ILS S - Conduct Sustainment Study for Prime Vendor Delivery & 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:

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:

**UNCLASSIFIED**

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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:

TOTAL PROJECT COST:	19795	0	0	0	0	0	0	19795
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## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE PROJECT  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P) IP4**

**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
JSAM																																
Advanced Component Development and Prototypes (ACD&P)	>>			4Q																												
PDRR Prototype Fabrication/Delivery	>>			2Q																												
ACD&P Prototype Government Test				2Q 3Q																												
Milestone B IPR (IP5)								1Q																								
JSGPM																																
TEMP Approved				1Q																												
Engineering Design Test (EDT)				1Q 2Q																												
First Prototype				1Q																												
IPR for transition to SDD Phase				2Q																												

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
MB4 MEDICAL BIOLOGICAL DEFENSE (ACD&P)	68596	40536	68008	28968	45255	38601	18800	9540	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 "shots" 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, Plague, Smallpox, Tularemia, Staphylococcal Enterotoxins, and Equine Encephalitis vaccines.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BOTULINUM VACCINE	15985	11719	22757	19369
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Accomplishments:**

- 4700 JVAP - Recombinant Botulinum Vaccine (Title IX) - Conducted development of polyclonal humanized serotypes A, B, C, E, and F antitoxin product.
- 11285 JVAP - Recombinant Botulinum Vaccine - Continued manufacturing process refinement studies, including antigen and adjuvant characterization for both serotypes of the recombinant Botulinum vaccine. Initiated pilot lot production of individual serotypes and completed production of cGMP lot of serotype B.

**Total** 15985

**FY 2003 Planned Program:**

- 2038 JVAP - Recombinant Botulinum Vaccine - Initiate non-clinical studies.
- 646 JVAP - Recombinant Botulinum Vaccine - Initiate planning and preparation for Phase 1 clinical trial.
- 2842 JVAP - Recombinant Botulinum Vaccine - Complete manufacturing process development including adjuvant formulation studies.
- 6193 JVAP - Recombinant Botulinum Vaccine - Complete current cGMP pilot lot manufacturing of serotype A and initiate final container stability testing.

**Total** 11719

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>MB4</b>

**FY 2004 Planned Program:**

- 2048 JVAP - Recombinant Botulinum Vaccine - Initiate Phase 1 clinical trial execution and monitoring.
- 13853 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.
- 200 JVAP - Recombinant Botulinum Vaccine - Submit IND application.
- 456 JVAP - Recombinant Botulinum Vaccine - Continue non-clinical studies and final container stability testing.
- 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. The Operational Requirements Document (ORD) specifies battlefield protection of the warfighter against bolutinum serotypes A, B, C, E, and F. Current funding supports licensure of a bivalent A, B vaccine only. Funding will facilitate a significant upgrade to the bivalent vaccine under development and provide an enhanced level of protection.

**Total** 22757

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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:**

- 15849 JVAP - Recombinant Botulinum Vaccine - Continue process validation efforts for serotypes A and B.
- 3320 JVAP - Recombinant Botulinum Vaccine - Complete Phase 1 clinical trial and receive final report.
- 200 JVAP - Recombinant Botulinum Vaccine - Complete non-clinical studies and continue stability testing.

**Total** 19369

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ENCEPHALITIS VACCINE	4590	9661	6098	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 700 JVAP - Equine Encephalitis Vaccines - Completed manufacture of a cGMP pilot lot and began stability and lot release testing for Venezuelan Equine Encephalitis (VEE) 1AB component of the vaccine.
- 260 JVAP - Equine Encephalitis Vaccines - Began assay development and qualification of the VEE 1AB component.
- 1630 JVAP - Equine Encephalitis Vaccines - Initiated non-clinical safety studies for the VEE 1AB component.
- 2000 JVAP - Equine Encephalitis Vaccines (Title IX) - Conducted formulation and lyophilization studies for clinical studies.

**Total** 4590

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2003 Planned Program:**

- 2162 JVAP - Equine Encephalitis Vaccines - Continue assay development and validation of the VEE 1AB component.
- 1918 JVAP - Equine Encephalitis Vaccines - Continue stability and lot release testing on cGMP pilot lot of the VEE 1AB component.
- 5581 JVAP - Equine Encephalitis Vaccines - Conduct non-human primate neurovirulence testing and equine safety study of the VEE 1AB component.

**Total** 9661

**FY 2004 Planned Program:**

- 1438 JVAP - Equine Encephalitis Vaccines - Continue stability testing on cGMP pilot lot of the VEE 1AB component.
- 4460 JVAP - Equine Encephalitis Vaccines - Conduct Phase 1 clinical trial on the VEE 1AB component.
- 200 JVAP - Equine Encephalitis Vaccines - Submit IND application for the VEE 1AB component.

**Total** 6098

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NEXT GENERATION ANTHRAX VACCINE	12000	1494	12973	0
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Accomplishments:**

- 3300 JVAP - Next Generation Anthrax Vaccine - Conducted process definition studies of candidate recombinant protective antigen NGAV including stability and formulation studies. Initiated non-clinical studies.
- 200 JVAP - Next Generation Anthrax Vaccine - Submitted IND application for Phase 1 study.
- 3000 JVAP - Next Generation Anthrax Vaccine (Title IX) - Conducted development of vaccine candidates that can be administered orally.
- 1500 JVAP - Next Generation Anthrax Vaccine (Title IX) - Conducted stability testing of candidate NGA vaccine candidate products.
- 4000 JVAP - Next Generation Anthrax Vaccine (Title IX) - Conducted toxicity testing of candidate NGA vaccine candidate products.

**Total** 12000

**FY 2003 Planned Program:**

- 179 JVAP - Next Generation Anthrax Vaccine - Continue process definition work for a candidate recombinant protective antigen NGAV.
- 200 JVAP - Next Generation Anthrax Vaccine - Manufacture and characterize master cell and working cell banks. Initiate cGMP pilot lot production.

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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 Planned Program (Cont):**

- 415 JVAP - Next Generation Anthrax Vaccine - Conduct assay development and validation, and initiate product stability studies.
- 700 JVAP - Next Generation Anthrax Vaccine - Conduct Phase 1 clinical trial.

**Total 1494**

**FY 2004 Planned Program:**

- 3500 JVAP - Next Generation Anthrax Vaccine - Continue product stability studies.
- 9283 JVAP - Next Generation Anthrax Vaccine - Complete manufacturing process development and cGMP pilot lot production.
- 190 JVAP - Next Generation Anthrax Vaccine - Conduct manufacturing formulation optimization studies.

**Total 12973**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
PLAGUE VACCINE	7805	7513	26180	9599
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 4805 JVAP - Plague Vaccine - Conducted process development and comparability studies in higher animal species for Plague vaccine. Initiated assay development and validation.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>MB4</b>		
<p><b>FY 2002 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3000 JVAP - Plague Vaccine (Title IX) - Conducted development of vaccine candidates that can be administered orally.</li> </ul> <p><b>Total 7805</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 6200 JVAP - Plague Vaccine - Continue process develop efforts to include: optimization, formulation, and stability studies, the manufacture of five demonstration runs, and process transfer. Continue assay development and validation.</li> <li>• 910 JVAP - Plague Vaccine - Begin animal immunogenicity studies and non-clinical testing.</li> <li>• 403 JVAP - Plague Vaccine - Initiate bulk stability, container stability, and reconstitution stability testing on pilot lot.</li> </ul> <p><b>Total 7513</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3380 JVAP - Plague Vaccine - Continue stability testing and initiate animal testing.</li> <li>• 3000 JVAP - Plague Vaccine - Complete toxicology and immunogenicity testing.</li> <li>• 8200 JVAP - Plague Vaccine - Manufacture cGMP pilot lot and three qualification lots.</li> <li>• 11600 JVAP - Plague Vaccine - Funds the preparation and submission of an IND application. Conduct Phase I trials, non-human primate studies and perform animal efficacy studies on the UK product in order to collect data for a down-select decision.</li> </ul> <p><b>Total 26180</b></p>		
Project MB4/Line No: 076	Page 107 of 138 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>MB4</b>
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**FY 2005 Planned Program:**

- 200 JVAP - Plague Vaccine - Submit IND Application
- 4359 JVAP - Plague Vaccine - Continue non-clinical studies to include animal efficacy studies utilizing alternate delivery systems.
- 4750 JVAP - Plague Vaccine - Initiate Phase 1 clinical trial.
- 290 JVAP - Plague Vaccine - Continue stability testing.

**Total** 9599

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
VACCINE SE	2300	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 2300 JVAP - Staphylococcal Enterotoxin (Title IX) - Began toxicity testing and preparation of IND notification required for clinical trials for the SE vaccine.

**Total** 2300

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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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SMALLPOX VACCINE	15200	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 10200 JVAP - Smallpox Vaccine (Title IX) - Supported the expansion of Phase 1 clinical trials as required by the FDA to obtain data sufficient for submission of a licensure application for the DoD cell culture derived new smallpox vaccine.
- 5000 JVAP - Smallpox Vaccine (Title IX) - Began processing, bottling and regulatory approval of all available vaccinia immune globulin, a product required by the FDA as a potential adjunct to smallpox vaccine used to treat adverse reactions to smallpox vaccine.

**Total** 15200

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
TULAREMIA VACCINE	10230	9555	0	0
RDT&E Articles (Quantity)	0	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>
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**FY 2002 Accomplishments:**

- 7570 JVAP - Tularemia Vaccine - Continued manufacturing process refinement studies in preparation for production of cGMP pilot lot.
- 2660 JVAP - Tularemia Vaccine - Continued non-clinical and product characterization studies.

**Total 10230**

**FY 2003 Planned Program:**

- 550 JVAP - Tularemia Vaccine - Complete cGMP pilot lot production and conduct final container stability testing of pilot lot.
- 2750 JVAP - Tularemia Vaccine - Complete characterization studies and begin development of surrogate marker efficacy assay.
- 6255 JVAP - Tularemia Vaccine - Conduct immunogenicity and toxicity studies.

**Total 9555**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BIOLOGICAL VACCINES	486	0	0	0
RDT&E Articles (Quantity)	0	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>
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**FY 2002 Accomplishments:**

- 486 JVAP - Vaccine Advanced Component Development - Continued development of novel antigens (Staphylococcal Enterotoxins, Ricin), adjuvants, preservatives, and delivery systems for biological defense vaccines. This included formulation and process development studies; preclinical; initial safety and immunogenicity studies; and supported technology transfers from the research laboratories.

**Total**     486

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	594	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 594 SBIR

**Total**     594

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	82779	42886	63097	60938	56756	57350	60676	59343	Cont	Cont
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	45032	43621	5880	3087	3653	14961	58971	71758	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>

**D. Acquisition Strategy:**

VAC BOT            Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports advanced development of a rBotulinum Multivalent (AB) vaccine, a requirement in the Joint Chiefs of Staff threat list.

VAC ENC            Using a prime systems contract as the single integrator for the advance development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of BD vaccines will be achieved by the 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. The current budget supports initial development of a Venezuelan Equine Encephalitis vaccine, a requirement in the Joint Chiefs of Staff threat list.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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VAC NGA                      Using a prime systems contract as the single integrator for the advance development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports initial development of a NGA vaccine, a requirement in the Joint Chiefs of Staff threat list.

VAC PLG                      Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports development of a Plague vaccine, a requirement in the Joint Chiefs of Staff threat list.

VAC SE                        Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports initial development of an SE vaccine, a requirement in the Joint Chiefs of Staff threat list.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>
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VAC SPX                      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. Three recent events necessitate modification 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. A down selection among the DoD and DHHS smallpox vaccine candidates has been scheduled following completion of the Phase 1 clinical trials. Following the down selection decision, a new Acquisition Program Baseline (APB) for the smallpox vaccine program will be developed and submitted.

VAC TUL                      Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of BD vaccines will be achieved by the 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. The current budget supports advanced development of a Tularemia vaccine to IND status, a requirement in the Joint Chiefs of Staff threat list.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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VACCINES

Approximately 18 new BD vaccine candidates are being developed against validated BW threat agents through Biological Defense Medical Research Programs (S&T). To ensure the availability of these vaccines for protection of U.S. forces, a prime systems contract was awarded in Nov 97 for a single integrator to manage the advanced development, production, storage, and testing of these products. Successful FDA licensure of BD vaccines can best be achieved using the prime contractor who will function as the "responsible head" and license holder to perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The anthrax vaccine procurement is sole-sourced to the only FDA-licensed supplier, BioPort Corporation.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>
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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
VAC BOT													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	8093	1Q FY03	18297	1Q FY04	13995	1Q FY05	0	40385	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	3343	1Q FY03	3816	1Q FY04	0	NONE	0	7159	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	11250	1Q FY04	0	NONE	0	11772	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	5025	1Q FY03	17075	1Q FY04	0	NONE	0	22100	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	2097	1Q FY03	0	NONE	0	NONE	0	2097	0
Subtotal I. Product Development:				0	19080		50438		13995		0	83513	

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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.  
 Remarks: Cost to Complete: "Continuing"

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>VAC BOT</b>													
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	200	1Q FY04	0	NONE	0	200	0
<b>VAC ENC</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	0	NONE	200	1Q FY04	0	NONE	0	200	0
<b>VAC PLG</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	0	NONE	200	1Q FY04	0	NONE	0	200	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>
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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
Subtotal II. Support Costs:				0	0		600		0		0	600	

Remarks: Cost to Complete: "Continuing"

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
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	2304	1Q FY04	3072	1Q FY05	0	7034	0
VAC ENC													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	4617	1Q FY03	1272	1Q FY04	0	NONE	0	5889	0
VAC NGA													
OTHT SB - Vaccine Development - Includes Testing, Evaluation, and Non-Clinical/Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	462	1Q FY03	0	NONE	0	NONE	0	462	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	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>VAC BOT</b>													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	164	1Q FY03	232	1Q FY04	294	1Q FY05	0	690	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	PEO, Falls Church, VA	U	0	166	1Q FY03	235	1Q FY04	296	1Q FY05	0	697	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	130	2Q FY03	183	2Q FY04	231	2Q FY05	0	544	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	45	2Q FY03	65	2Q FY04	81	2Q FY05	0	191	0
PM/MS S - Award Fee (Maximum 10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1463	1Q FY03	1241	1Q FY04	1400	1Q FY05	0	4104	0
<b>VAC ENC</b>													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	136	1Q FY03	85	1Q FY04	0	NONE	0	221	0
PM/MS S - Vaccine Development-Program Management/Program Manager Support	Allot	PEO, Falls Church, VA	U	0	137	1Q FY03	87	1Q FY04	0	NONE	0	224	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>
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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 - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	107	2Q FY03	67	2Q FY04	0	NONE	0	174	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	37	2Q FY03	24	2Q FY04	0	NONE	0	61	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1284	1Q FY03	547	1Q FY04	0	NONE	0	1831	0
<b>VAC NGA</b>													
PM/MS S - Vaccine Development-Joint Vaccine Acquisition Program	Allot	PEO, Falls Church, VA	U	0	20	2Q FY03	184	2Q FY04	0	NONE	0	204	0
PM/MS S - Vaccine Development-PM Support	Allot	CBMS, Fort Detrick, MD	U	0	21	1Q FY03	182	1Q FY04	0	NONE	0	203	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	17	2Q FY03	144	2Q FY04	0	NONE	0	161	0
PM/MS S - Contractor Systems Engineering/Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	6	2Q FY03	50	2Q FY04	0	NONE	0	56	0
PM/MS S - Award Fee (Maximum 10.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	446	1Q FY03	1163	1Q FY04	0	NONE	0	1609	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
<b>VAC PLG</b>													
PM/MS S - Vaccine Development - Program Management/Program Manager Support.	Allot	PEO, Falls Church, VA	U	0	106	1Q FY03	207	1Q FY04	147	1Q FY05	0	460	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	105	1Q FY03	205	1Q FY04	145	1Q FY05	0	455	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	83	2Q FY03	161	2Q FY04	115	2Q FY05	0	359	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	29	2Q FY03	57	2Q FY04	40	2Q FY05	0	126	0
PM/MS S - Award Fee (10%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	1061	1Q FY03	1307	1Q FY04	836	1Q FY05	0	3204	0
<b>VAC TUL</b>													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	134	1Q FY03	0	NONE	0	NONE	0	134	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	PEO, Falls Church, VA	U	0	135	1Q FY03	0	NONE	0	NONE	0	135	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 - 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	594	1Q FY03	0	NONE	0	NONE	0	594	0
Subtotal IV. Management Services:				0	7323		6426		3585		0	17334	

Remarks: Cost to Complete: "Continuing"

TOTAL PROJECT COST:	0	40536		68008		28968		0	137512
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## Exhibit R-4a, Schedule Profile

DATE  
**February 2003**

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

**PE NUMBER AND TITLE**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)** **PROJECT**  
**MB4**

**D. Schedule Profile:**

	FY 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	>>							3Q																								
cGMP Pilot Lot			3Q					3Q																								
Non-Clinical Testing							2Q									4Q																
Investigational New Drug (IND) Application Submission											2Q																					
Phase 1 Clinical Trial (A/B)											2Q					1Q																
Milestone B																4Q																
Phase 2a Clinical Trial																				3Q												4Q
Milestone C																				4Q												
VAC ENC																																
Process Development	>>																															2Q
Non-Clinical Testing			1Q					4Q																								
Investigational New Drug (IND) Application											1Q																					
Phase 1 Clinical Trials											1Q					3Q																
Milestone B																1Q																



## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE PROJECT  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P) 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 TUL																																
Process Development				>> 	1Q																											
cGMP Pilot Lot					1Q 2Q																											

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
MC4 MEDICAL CHEMICAL DEFENSE (ACD&P)	1828	1680	4798	9780	4511	4548	4566	4608	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.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MEDICAL CHEMICAL DEFENSE	1828	1656	4798	9780
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Accomplishments:**

- 89 Advanced Anticonvulsant - Conducted a bridging study between the current and a different higher animal species model to improve the anticonvulsant animal model.
- 1138 Pyridostigmine Bromide - Continued clinical protocol to validate biological markers of efficacy as required by the FDA.
- 245 Pyridostigmine Bromide - Validated method to analyze Pyridostigmine Bromide in the blood as required by the FDA. Transitioned program to System Development and Demonstration (SDD) phase.
- 111 Advanced Anticonvulsant - Completed two-year study in surrogate species to validate markers of anticonvulsant efficacy as a model to identify better drugs.
- 120 Advanced Anticonvulsant - Completed a literature study to compare midazolam to FDA approved seizure drugs for evidence of respiratory depression.
- 125 Advanced Anticonvulsant - Completed a subject matter expert focus panel to continue the development of midazolam as a replacement for the currently fielded anticonvulsant.

**Total** 1828

**FY 2003 Planned Program:**

- 752 Advanced Anticonvulsant - Initiate determination of optimum serum levels of midazolam in higher animal species model.
- 281 Advanced Anticonvulsant - Initiate neuropathological analysis of higher animal species model study.
- 623 Advanced Anticonvulsant - Prepare and submit documentation for Investigational New Drug (IND) application.

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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 Planned Program (Cont):**  
**Total 1656**

**FY 2004 Planned Program:**

- 2556 Advanced Anticonvulsant - Initiate and conduct human clinical study to determine maximum tolerated dose of advanced anticonvulsant candidates.
- 495 Advanced Anticonvulsant - Continue optimum serum level studies in higher animal species model study.
- 247 Advanced Anticonvulsant - Continue neuropathological analysis of higher animal species model study.
- 1500 Chemical Medical Advanced Component Development - Initiate higher animal species oxime studies for Next Generation Oxime; initiate preparation of documentation for IND application for Chemical Agent Prophylaxis (Bioscavenger).

**Total 4798**

**FY 2005 Planned Program:**

- 2694 Advanced Anticonvulsant - Initiate development of manufacturing processes.
- 1469 Advanced Anticonvulsant - Initiate clinical study of therapeutic dosage.
- 1393 Advanced Anticonvulsant - Initiate and conduct definitive animal efficacy studies.
- 196 Advanced Anticonvulsant - Complete optimum serum level studies in higher animal species model.
- 49 Advanced Anticonvulsant - Complete neuropathological analysis in higher animal species model.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2005 Planned Program (Cont):**

- 979 Advanced Anticonvulsant - Complete maximum tolerable human dose study.
- 3000 Chemical Advanced Component Development - Complete higher animal species oxime studies; initiate human safety studies; and prepare documentation for IND application for Next Generation Oxime. Submit documentation for IND application; initiate human safety studies and process development for Chemical Agent Prophylaxis (Bioscavenger).

**Total** 9780

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	24	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 24 SBIR

**Total** 24

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1426	1926	1462	1419	7183	7214	7559	6261	Cont	Cont

**D. Acquisition Strategy:**

MEDCHEM      These Advanced Component Development and Prototypes and the System Development and Demonstration 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. The current acquisition strategy of in-house development and the use of prime contractors will be continued.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>
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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 - Advanced Anticonvulsant Manufacturing Processes	C/FFP	TBS		0	0	NONE	0	NONE	2574	3Q FY05	0	2574	0
Subtotal I. Product Development:				0	0		0		2574		0	2574	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>MEDCHEM</b>													
TD/D S - Advanced Anticonvulsant IND Application	Allot	Chem Bio Medical Systems, Frederick, MD	U	0	59	1Q FY03	32	1Q FY04	66	1Q FY05	0	157	0
TD/D SB - Advanced Anticonvulsant IND Application	C/CPFF	EER Systems, Inc., Frederick, MD	C	0	539	1Q FY03	0	NONE	0	NONE	0	539	0
TD/D S - Adv. Component Dev. IND Application for Bioscavenger	C/CPFF	TBS	C	0	0	NONE	300	1Q FY04	0	NONE	0	300	0
TD/D S - Adv. Component Dev. IND Application for Bioscavenger & Oxime	C/CPFF	TBS		0	0	NONE	0	NONE	600	1Q FY05	0	600	0
<b>Subtotal II. Support Costs:</b>				<b>0</b>	<b>598</b>		<b>332</b>		<b>666</b>		<b>0</b>	<b>1596</b>	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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 - Advanced Anticonvulsant Neuropathological Study	MIPR	USA Medical Research Institute of Chemical Defense, APG, MD	U	0	268	1Q FY03	247	1Q FY04	45	1Q FY05	0	560	0
OTHT SB - Advanced Anticonvulsant Tolerable Human Dose Study	C/CPFF	TBS	C	0	0	NONE	2522	1Q FY04	935	1Q FY05	0	3457	0
OTHT SB - Advanced Anticonvulsant Clinical Study of Therapeutic Dosage	MIPR	USA Medical Research Institute of Chemical Defense, APG, MD	U	0	0	NONE	0	NONE	1403	1Q FY05	0	1403	0
DTE S - Advanced Anticonvulsant Definitive Animal Efficacy Studies	C/FFP	TBS	C	0	0	NONE	0	NONE	1267	1Q FY05	0	1267	0
OTE SB - Advanced Anticonvulsant Serum Level Studies in Higher Animal Species	MIPR	USA Medical Research Institute for Chemical Defense, APG, MD	U	0	720	1Q FY03	465	1Q FY04	188	1Q FY05	0	1373	0
DTE S - Adv. Component Dev. Higher Animal Species Oxime Studies	C/CPFF	TBS	C	0	0	NONE	1025	1Q FY04	0	NONE	0	1025	0
DTE S - Adv. Component Dev. Higher Animal & Human Species Studies for Oxime & Bioscavenger	C/CPFF	TBS		0	0	NONE	0	NONE	2246	1Q FY05	0	2246	0
<b>Subtotal III. Test and Evaluation:</b>				<b>0</b>	<b>988</b>		<b>4259</b>		<b>6084</b>		<b>0</b>	<b>11331</b>	

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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III. Test and Evaluation - Cont.

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

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	19	2Q FY04	41	2Q FY05	0	66	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	18	2Q FY03	53	2Q FY04	117	2Q FY05	0	188	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	23	1Q FY03	67	1Q FY04	148	1Q FY05	0	238	0
PM/MS S - Program Executive Office	Allot	PEO, Falls Church, VA	U	0	23	1Q FY03	68	1Q FY04	150	1Q FY05	0	241	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	24	1Q FY03	0	NONE	0	NONE	0	24	0
Subtotal IV. Management Services:				0	94		207		456		0	757	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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TOTAL PROJECT COST:	0	1680		4798		9780		0	16258	
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## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE**  
**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)** **PROJECT**  
**MC4**

**D. Schedule Profile:**

	FY 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																																		
Advanced Anticonvulsant (AAS)	>>	—————																																
AAS - IND Application								4Q																										
AAS - Pre-Clinical Studies						1Q	—————		4Q																									
AAS - Non-Clinical Trials						1Q	—————		3Q																									
AAS - Phase 1 and Phase 2 Trials										2Q	—————		2Q																					
AAS - Manufacturing/Testing															1Q	—————		1Q																
AAS - New Drug Application (NDA) Submission																																1Q		
Oxime - Higher Animal Species Studies										1Q	—————		4Q																					
Oxime - IND Application															1Q	—————		4Q																
Bioscavenger - IND Application										1Q	—————		4Q																					
Bioscavenger - Process Dev. & Human Safety Study															1Q	—————		4Q																

**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 2003</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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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	168081	172262	148017	83325	72900	58252	93541	114357	Continuing	Continuing
BJ5 BIOLOGICAL DEFENSE (SDD)	12428	14308	0	0	0	0	0	0	0	26736
CA5 CONTAMINATION AVOIDANCE (SDD)	83162	64296	83070	37713	46369	25097	14427	20177	Continuing	Continuing
CM5 WMD - CIVIL SUPPORT TEAM (SDD)	0	977	984	14202	390	0	0	0	0	16553
CO5 COLLECTIVE PROTECTION (SDD)	8440	4200	2954	2582	4129	4585	2669	2720	Continuing	Continuing
DE5 DECONTAMINATION SYSTEMS (SDD)	2246	4859	11332	3327	5725	5423	9915	4776	Continuing	Continuing
IP5 INDIVIDUAL PROTECTION (SDD)	15347	38075	42335	20995	5451	972	0	8665	Continuing	Continuing
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	45032	43621	5880	3087	3653	14961	58971	71758	Continuing	Continuing
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1426	1926	1462	1419	7183	7214	7559	6261	Continuing	Continuing

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</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>	
<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>		
Line No: 083	Page 2 of 167 Pages	Exhibit R-2 (PE 0604384BP)

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

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

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

DoD Biological Defense mission requires the detection of validated biological threat agents to provide early warning capabilities on mobile and fixed platforms. This program element will provide theater protection through the development of point and stand-off detection systems. The detection system concept will provide detection, identification, warning, and sample collection for verification that a biological agent attack has occurred. This program element also provides for the development of biological defense medical programs. DoD Biological Defense medical mission will address: (1) protective vaccines - vaccination capability against the most probable biological threat agents; (2) identification - clinical identification of biological threat agents through medical evaluation and laboratory analysis to augment early warning capabilities.

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

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2003</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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<b>B. <u>Program Change Summary:</u></b>	<b><u>FY 2002</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 2003 PB)	161383	169018	126678	108418
Current Biennial Budget Estimates (FY 2004/2005)	168081	172262	148017	83325
Total Adjustments	6698	3244	21339	-25093
a. Congressional General Reductions	0	-4256	0	0
b. Congressional Increases	15000	7500	0	0
c. Reprogrammings	-5573	-2225	0	0
d. SBIR/STTR Transfer	-2729	0	0	0
e. Other Adjustments	0	0	21339	-25093

**Change Summary Explanation:**

**Funding:** FY02 - Adjustment for CBD (+15,000K CA5).

FY03 - Adjustment for CBD (+\$7,500K CA5).

FY04 - Adjustment for CBD (+\$22,898 CA5).

**Schedule:**

**Technical:**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
BJ5 BIOLOGICAL DEFENSE (SDD)	12428	14308	0	0	0	0	0	0	0	26736

**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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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>BJ5</b>
<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 Critical Reagent Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/DNA biological detection requirements from Advanced Component Development and Prototype (ACD&amp;P) through production. The CRP ensures the availability of high-quality reagents throughout the life-cycle of all Biological Warfare (BW) detection/identification systems. This project supports all aspects of manufacturing "scale-up" of developmental protocols for CRP-developed products, including maintenance of repositories and validation laboratories.</p> <p>The Joint Biological Standoff 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. 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> <p>The JBPDS, IBADS, and JBSDS programs will transition from BJ5 to CA5 starting in FY04. The CRP program will transition from BJ5 to MB5 starting in FY04.</p>		
Project BJ5/Line No: 083	Page 6 of 167 Pages	Exhibit R-2a (PE 0604384BP)

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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. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CRITICAL REAGENTS PROGRAM	1113	2008	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 900 CRP - Transitioned three newly developed International Task Force (ITF)-6B targets. Maintained reagent repositories and validation processes.
- 213 CRP - Develop 65d validation/conformance test protocols for Electrochemiluminescence (ECL) Assays.

**Total** 1113

**FY 2003 Planned Program:**

- 984 CRP - Continue transition of ITF-6B targets. Initiate insertion of ITF-6B reagents into end assay formats. Maintain reagent repositories and validation processes.
- 1024 CRP - Initiate transition of three (out of 30) Nucleic Acid Assays, develop validation, and conformance testing protocols in support of ongoing Homeland Defense/National Capital Region Bio-Detection Efforts.

**Total** 2008

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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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
INTERIM BIO AGENT DETECTOR SYS (IBADS)	326	390	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 326 IBADS - Continued engineering and material support of rapid prototype systems.

**Total** 326

**FY 2003 Planned Program:**

- 390 IBADS - Continue engineering and material support of rapid prototype systems.

**Total** 390

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	6825	2395	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 4650 JBPDS BLKI - Conducted Initial Operational Test and Evaluation (IOT&E) for the Army at the Dugway Proving Ground, UT.

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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 2002 Accomplishments (Cont):**

- 2175 JBPDS BLKI - Initiated planning for USAF, USMC, and USN IOT&E.

**Total** 6825

**FY 2003 Planned Program:**

- 2395 JBPDS BLKI - Complete Army IOT&E and final report. Initiate USAF, USMC, and USN IOT&E.

**Total** 2395

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	4164	9310	0	0
RDT&E Articles (Quantity)	5	0	0	0

**FY 2002 Accomplishments:**

- 4164 JBSDS - Continued system development and integration of a lightweight, short range, biological standoff detection system. Two contractors built candidates for testing. One contractor built two systems at \$750K each, and the other, three systems at \$500K each.

**Total** 4164

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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 Planned Program:**

- 5356 JBSDS - Initiate the transition of the early warning standoff systems developed in the TT-Bio program into the Systems Integration phase of the JBSDS program. This includes software development, modeling and simulation analysis, and preparation of program documentation.
- 1954 JBSDS - Initiate and complete Developmental Testing (DT) of competing candidate systems.
- 2000 JBSDS - Initiate limited Operational Testing (OT) and assessment of JBSDS competing candidate systems.

**Total** 9310

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	205	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 205 SBIR

**Total** 205

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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)	4730	0	7459	7651	16742	30711	24300	0	0	91593
JP0100 JOINT BIO POINT DETECTION SYSTEM (JPDS)	44623	72245	0	0	0	0	0	0	0	116868
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	3903	2969	0	0	0	0	0	0	0	6872
JPO230 PORTAL SHIELD EQUIPMENT	27345	0	0	0	0	0	0	0	0	27345
M93001 BIO INTEGRATED DETECTOR SYSTEM (BIDS)	54754	0	0	0	0	0	0	0	0	54754
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	4000	27870	44806	65189	72296	79790	38880	38791	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>BJ5</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, and the Joint Biological Point Detection System (JBPDS) Block I and II. This program also supports the development and manufacture of individual Handheld Immunochromatographic Assays (HHA) and the DoD Biological Sampling Kit. This results in improved identification performance and ensures comparable results across disparate systems. The program is designed along a stepwise strategy. BA4 funding develops new targets and target production protocols and develops multiple antibody candidates. Those candidate antibodies are then transitioned into multiple end item assay formats (e.g. HHAs) and their performance is validated. This transition, validation and production scale-up occurs under BA5 funding. After successful end item scale-up, those 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, and JBPDS Block I requirements. Some performance improvements in those reagents will be pursued. However, the bulk of the FY04-09 development activity will focus on antibody and HHA development against 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 1QFY03. 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 are being actively supported as of FY02.

IBADS                      In-house development, fabrication and fielding of 19 rapid prototypes.

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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>

JBPDS                      The Joint Biological Point Detection System (JBPDS) uses a spiral development strategy to expedite fielding of a credible force protection strategy as quickly as possible to the Services, while ensuring that a process is in place to insert maturing technologies and lessons learned. 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 the time-phased JORD requirements. JBSDS will initially 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>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>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, Bethesda, MD	U	921	191	2Q FY03	0	NONE	0	NONE	0	1112	0
HW C - Transition of ITF-6B and insertion of ITF-6B reagents into end assay formats.	MIPR	USAMRIID, Ft. Detrick, MD	U	0	191	1Q FY03	0	NONE	0	NONE	0	191	0
HW C - Transition nucleic acid assays, and develop validation and conformance testing protocols.	MIPR	Naval Medical Research Center, Bethesda, MD	U	0	181	1Q FY03	0	NONE	0	NONE	0	181	0
SW SB - Transition nucleic acid assays, and develop validation and conformance testing protocols.	MIPR	ECBC, Aberdeen, MD	U	0	181	1Q FY03	0	NONE	0	NONE	0	181	0
JBSDS													
HW S - Develop Initial JBSDS Prototypes	C/CPFF	Fibertek, Herndon, VA	C	3866	0	NONE	0	NONE	0	NONE	0	3866	0
HW S - Develop Initial JBSDS Prototypes	C/CPFF	SESI, Burtonsville, MD	C	2200	0	NONE	0	NONE	0	NONE	0	2200	0
SW S - Development and Integration	C/CPFF	TBS	C	0	2928	2Q FY03	0	NONE	0	NONE	0	2928	0
Subtotal I. Product Development:				6987	3672		0		0		0	10659	

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
<b>CRP</b>													
TD/D SB - Critical Reagent Product	MIPR	Naval Medical Research Center, Bethesda, MD	U	600	27	2Q FY03	0	NONE	0	NONE	0	627	0
TD/D SB - Critical Reagent Product	MIPR	USAMRIID, Ft. Detrick, MD	U	0	27	1Q FY03	0	NONE	0	NONE	0	27	0
TD/D SB - Critical Reagent Product	MIPR	Naval Medical Research Center, Bethesda, MD	U	0	19	1Q FY03	0	NONE	0	NONE	0	19	0
TD/D SB - Critical Reagent Product	PO			0	23	1Q FY03	0	NONE	0	NONE	0	23	0
<b>IBADS</b>													
ILS S - Continued Support of Fielded IBAD Systems	MIPR	NSWC, Dahlgren, VA	U	901	372	1Q FY03	0	NONE	0	NONE	0	1273	0
<b>JBSDS</b>													
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	850	1Q FY03	0	NONE	0	NONE	0	850	0
<b>Subtotal II. Support Costs:</b>				<b>1501</b>	<b>1479</b>		<b>0</b>		<b>0</b>		<b>0</b>	<b>2980</b>	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>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
<b>CRP</b>													
OTE C - Transition of ITF-6B and insertion of ITF-6B reagents into end assay formats.	MIPR	Naval Medical Research Center, Bethesda, MD	U	600	254	2Q FY03	0	NONE	0	NONE	0	854	0
OTHT C - Transition of ITF-6B and insertion of ITF-6B reagents into end assay formats.	MIPR	USAMRIID, Ft. Detrick, MD	U	461	254	2Q FY03	0	NONE	0	NONE	0	715	0
OTHT C - Transition nucleic acid assays, and develop validation and conformance testing protocols.	MIPR	Naval Medical Research Center, Bethesda, MD	U	0	287	1Q FY03	0	NONE	0	NONE	0	287	0
OTHT C - Transition nucleic acid assays, and develop validation and conformance testing protocols.	MIPR	ECBC, Aberdeen, MD	U	0	287	1Q FY03	0	NONE	0	NONE	0	287	0
<b>JBPDS</b>													
OTE C - Initiate and Complete Army Initial Operational Test & Evaluation	MIPR	ATEC/AFOTEC, Washington, DC	U	6886	2395	1Q FY03	0	NONE	0	NONE	0	9281	0
<b>JBSDS</b>													
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	SBCCOM, 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
<b>Subtotal III. Test and Evaluation:</b>													
				7947	7431		0		0		0	15378	

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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	22	2Q FY03	0	NONE	0	NONE	0	22	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	28	1Q FY03	0	NONE	0	NONE	0	28	0
PM/MS S - Program Executive Office	Allot	PEO, Falls Church, VA	U	0	28	1Q FY03	0	NONE	0	NONE	0	28	0
IBADS													
PM/MS S - Program Management/Program Manager Support	Various	JPO-BD, Falls Church, VA	U	53	18	1Q FY03	0	NONE	0	NONE	0	71	0
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	PM NBCDS, APG, MD	U	333	1417	1Q FY03	0	NONE	0	NONE	0	1750	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
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA		0	205	1Q FY03	0	NONE	0	NONE	0	205	0
Subtotal IV. Management Services:				435	1726		0		0		0	2161	

Remarks: JBSDS - Integrated Product Team includes: Chemical School, FT Leonard Wood, MO; Brooks Air Force Base, San Antonio, TX; and Navy Surface Warfare Center, Dahlgren, VA.

<b>TOTAL PROJECT COST:</b>	16870	14308	0	0	0	31178
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**Exhibit R-4a, Schedule Profile**

DATE **February 2003**

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

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

PROJECT  
**BJ5**

<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																																
ITF-6A List Complete	>>			4Q																												
ITF-6B List Complete		2Q														4Q																
DNA Panels for 10 Threat Agents				4Q												4Q																
DNA Efforts to ITF-6A and ITF-6B				4Q																												
ITF 6C List Complete																1Q																4Q
IBADS																																
Fielding Support	>>															4Q																
JBPDS																																
Operational Assessment 2 (OA2)				1Q																												
LRIP Phase 2 Start				1Q				4Q																								
Block I Army IOT&E								4Q				2Q																				
Multi Service IOT&E								4Q																								2Q
Block I First Unit Equipped (FUE)												3Q				1Q																
JBSDS																																
Initial JBSDS Tech Readiness Review								4Q																								
Initial JBSDS Milestone B												2Q																				
Initial JBSDS Competitive Test Fly-off																3Q																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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>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)																																
Initial JBSDS Developmental Testing					2Q																											
Initial JBSDS Milestone C									2Q																							
Initial JBSDS Initial Operational Test and Evaluation (IOT&E)													2Q	3Q																		
Initial JBSDS Production																	1Q	-----	1Q													
Initial JBSDS First Unit Equipped (FUE)																	1Q															
Next Generation JBSDS Concept Exploration					1Q	-----	4Q																									
Next Generation JBSDS Component Advanced Development									1Q	-----	4Q																					
Next Generation JBSDS Milestone B													1Q																			
Next Generation JBSDS System Development and Demo																	3Q	-----	2Q													
Next Generation JBSDS Developmental Test (DT)/Operational Test (OT)																					4Q	-----	3Q									
Next Generation JBSDS Critical Design Review (CDR)																					2Q											
Next Generation JBSDS Milestone C																									3Q							

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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>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)																																
Next Generation JBSDS Low Rate Initial Production (LRIP)																																
Next Generation JBSDS Initial Operational Test and Evaluation (IOT&E)																																
Next Generation JBSDS Full Rate Production																																
Next Generation JBSDS First Unit Equipped (FUE)																																

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2003</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 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
CA5 CONTAMINATION AVOIDANCE (SDD)	83162	64296	83070	37713	46369	25097	14427	20177	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) Artemis (Active Standoff Chemical Warfare Detection System), (2) Joint Biological Point Detection System (JBPDS), (3) Joint Biological Standoff Detection System (JBSDS), (4) Joint Chemical Agent Detector (JCAD), (5) Joint Contaminated Surface Detector (JCSD), (6) Joint Effects Model (JEM), (7) Joint Operational Effect Federation (JOEF) (8) Joint Service Lightweight Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), (9) Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD), (10) Joint Warning and Reporting Network (JWARN), (11) Mobile Chemical Agent Detector (MCAD), (12) Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV), and the (13) Multi-Mission Sensor (MMS).

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Artemis will be a near-real time, modular, autonomous, active standoff 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 standoff 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 standoff 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.

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.

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.

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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 Joint Biological Standoff 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. 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.

The JCAD program is developing a miniaturized, ruggedized, 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 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).

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<p>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).</p> <p>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.</p> <p>The JSLSCAD, provides 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 Standoff Chemical Agent Alarm (RSCAAL).</p>		
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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. Block I 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. Block II will provide automatic NBC message capability at the Global Command and Control System (GCCS) level. Block II 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. Block III will integrate NBC warning and reporting software to all targeted C4ISR systems and interface with NBC detectors and sensors. P3I will investigate new detectors/sensors and software changes to Service C4I systems.

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 MCAD is a commercial variant of the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD).

The Multi-Mission Sensor (MMS) is a stand-off program that provides early warning and hazard prediction to protect the United States against chemical and biological aerosol events. This effort will upgrade the software capability of the national network of Doppler radars to provide early warning through an integrated reporting network. Congressional guidance requires the project office to accelerate the development, testing, training, and deployment of this system using existing Doppler radar sites of the National Weather Service (NWS) and Federal Aviation Administration (FAA).

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

The JBPDS, IBADS, and JBSDS programs will transition from BJ5 to CA5 starting in FY04.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
INTERIM BIO AGENT DETECTOR SYS (IBADS)	0	0	310	293
RDT&E Articles (Quantity)	0	0	0	0

**FY 2004 Planned Program:**

- 310 IBADS - Continue engineering and material support of rapid prototype systems.

**Total** 310

**FY 2005 Planned Program:**

- 293 IBADS - Continue engineering and material support of rapid prototype systems.

**Total** 293

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	0	5900	2939
RDT&E Articles (Quantity)	0	0	0	0

**FY 2004 Planned Program:**

- 3900 JBPDS BLKI - Complete and transition Advanced Biological Aerosol Warning System (BAWS) upgrade to Low Rate Initial Production (LRIP) to meet Joint Operational Requirements Documents (JORD) objective requirements for detection. Initiate identifier upgrade. Incorporate software upgrades featuring prognostics for enhanced maintenance and reliability.
- 1000 JBPDS BLKI - Initiate configuration management including Reliability, Availability, and Maintainability, and Integrated Logistics Support (ILS).
- 1000 JBPDS BLKI - Complete and report USAF, USMC, and USN of IOT&E.

**Total** 5900

**FY 2005 Planned Program:**

- 800 JBPDS BLKI - Complete identifier component upgrades to meet Joint Operational Requirements Document (JORD) objective requirements for identification.
- 1339 JBPDS BLKI - Initiate Production Qualification Testing (PQT) and integrate into production JBPDS platforms for system simulant and live agent testing.

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

- 800 JBPS BLKI - Continue configuration management including Reliability, Availability, and Maintainability, and Integrated Logistics Support (ILS).

**Total** 2939

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL STANDOFF DETECTOR SYSTEM	0	0	16307	15637
RDT&E Articles (Quantity)	0	0	6	24

**FY 2004 Planned Program:**

- 1931 JBSDS - Initiate Initial Operational Test and Evaluation planning.
- 4731 JBSDS - Select one of two competing candidate systems and award a development contract. Initiate Low Rate Initial Production (six systems at \$800K each).
- 3131 JBSDS - Initiate Developmental Testing (Production Verification Test) of the Low Rate Initial Production (LRIP) units.
- 6514 JBSDS - Initiate development of next generation JBSDS system. This includes modeling and simulation analysis, and market research analysis.

**Total** 16307

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**FY 2005 Planned Program:**

- 1200 JBSDS - Initiate next generation JBSDS Engineering Developmental Testing.
- 9837 JBSDS - Continue the development of next generation JBSDS. Produce engineering prototypes (early prototypes, six at \$400K each, advanced prototypes, 18 at \$375K each) and support products for demonstration phase. Continue modeling and simulation analysis and preparation of documentation.
- 2000 JBSDS - Complete Initial Operational Test and Evaluation.
- 2600 JBSDS - Conduct transition of the initial model JBSDS to Full Rate Production. This includes preparation of program documentation, analysis of the final test report, and development of logistics support.

**Total** 15637

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT CHEMICAL AGENT DETECTOR (JCAD)	16726	22576	9181	0
RDT&E Articles (Quantity)	234	0	0	0

**FY 2002 Accomplishments:**

- 4499 JCAD - Continued Contractor Validation Test (CVT). Continued to plan for government development test (DT). Started planning for Initial Operational Test & Evaluation (IOT&E).
- 6215 JCAD - Continued hardware and software development on 234 contractor prototype units at an average unit cost of \$7272.

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<p><b>FY 2002 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3728 JCAD - Continued systems engineering and logistics planning.</li> <li>• 2284 JCAD - Began to design JCAD system interface with user platforms.</li> </ul> <p><b>Total 16726</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4767 JCAD - Complete hardware and software development based upon results from contractor and government DT.</li> <li>• 1355 JCAD - Continue systems engineering and logistics planning. Begin engineering support for Low Rate Initial Production (LRIP).</li> <li>• 3108 JCAD - Continue to design JCAD system interface with user platforms.</li> <li>• 9397 JCAD - Complete CVT and government DT.</li> <li>• 3949 JCAD - Continue to plan for IOT&amp;E.</li> </ul> <p><b>Total 22576</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 974 JCAD - Complete systems engineering and logistics planning.</li> <li>• 5118 JCAD - Conduct IOT&amp;E using 918 LRIP units, which will be purchased with production funds, at an average unit cost of \$7272.</li> <li>• 1810 JCAD - Complete system interface design based on results of IOT&amp;E.</li> </ul>		
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**FY 2004 Planned Program (Cont):**

- 1279 JCAD - Complete software algorithm update based on results of IOT&E.

**Total** 9181

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT CONTAMINATED SURFACE DETECTOR (JCSD)	2421	3203	0	0
RDT&E Articles (Quantity)	1	1	0	0

**FY 2002 Accomplishments:**

- 1721 JCSD - Initiated systems engineering, software, and hardware development. Built one prototype system for \$600K. Initiated logistics planning.
- 700 JCSD - Initiated testing of the prototype system.

**Total** 2421

**FY 2003 Planned Program:**

- 2384 JCSD - Initiate planning for and implement process for resolving vehicle integration issues and militarization of components. Continue logistics planning.
- 580 JCSD - Initiate field testing.
- 239 JCSD - Initiate development of systems specifications and competitive procurement package.

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**FY 2003 Planned Program (Cont):**  
**Total 3203**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Joint Effects Model	0	0	13045	976
RDT&E Articles (Quantity)	0	0	0	0

**FY 2004 Planned Program:**

- 2078 JEM Block I - Complete development of logistics/training plans and materials. Complete Post Deployment Software Support (PDSS) plans. Conduct MS C. Support continued Warfighter Integrated Process Team (IPT) involvement in program. Perform financial management, scheduling, planning, and reporting.
- 5692 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. Perform integration activities with all Service Global Command and Control System (GCCS) variants and other Command and Control (C2) system. Verify system interoperability requirements.
- 5275 JEM Block I - Conduct Developmental and Operational testing. Continue Independent Validation & Verification (IV&V). Update the Test and Evaluation Master Plan (TEMP) and the Verification Validation and Accreditation (VV&A) plan to support Milestone (MS) C. Produce T&E and VV&A reports.

**Total 13045**

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**FY 2005 Planned Program:**

- 976 JEM Block I - Conduct Full Rate Production (FRP) review. Transition to software production and installation on host systems. Conduct software maintenance to fulfill Initial Operational Capability (IOC) requirements. Perform financial management, scheduling, planning, and reporting.

**Total**    976

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Joint Operations Effects Federation	0	0	0	2478
RDT&E Articles (Quantity)	0	0	0	0

**FY 2005 Planned Program:**

- 2478 JOEF Block I - Continue IV&V. Conduct Developmental and Operational Testing.

**Total**    2478

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LTWT NBC RECON SYS (JSLNBCRS)	19595	7700	13766	6758
RDT&E Articles (Quantity)	0	0	0	0

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**FY 2002 Accomplishments:**

- 6831 JSLNBCRS - Completed software and hardware engineering development and integration of commercial off the shelf, government off the shelf software/hardware, and non-developmental item software/hardware products for HMMWV variant.
- 8495 JSLNBCRS - Conducted system test and evaluation (HMMWV DT II/Limited User Team) at Dugway and Yuma Proving Grounds.
- 2269 JSLNBCRS - Initiated LAV variant design/fabrication.
- 2000 JSLNBCRS - Conducted MCAD hand-off capability.

**Total** 19595

**FY 2003 Planned Program:**

- 1000 JSLNBCRS - Conduct DT I for LAV variant.
- 1711 JSLNBCRS - Continue development of Toxic Industrial Chemicals (TICs) and Toxic Industrial Materials (TIMs) software for Chemical Biological Mass Spectrometer (CBMS) Block II transition to JSLNBCRS procurement.
- 1200 JSLNBCRS - Conduct DT III for LRIP HMMWV variant and conduct MS C LRIP.
- 3789 JSLNBCRS - Start IOT&E for HMMWVs and LAVs for full rate production/Milestone C.

**Total** 7700

**FY 2004 Planned Program:**

- 3000 JSLNBCRS - Complete IOT&E for HMMWVs and LAVs variants.

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

- 4500 JSLNBCRS - Prepare MS C Full Rate Production (FRP) documentation for HMMWV and LAV; technical data package, ILS spares and provisioning, and fielding preparation. Conduct MS C FRP review.
- 6266 JSLNBCRS - Continue TICs and TIMs software upgrade for CBMS Block II transition to JSLNBCRS procurement. Initiate improvements to biological detection/identification capability.

**Total** 13766

**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.

**Total** 6758

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS LIGHTWEIGHT STANDOFF CHEMICAL AGENT DET (JSLSCAD)	8691	13971	3714	0
RDT&E Articles (Quantity)	35	0	0	0

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**FY 2002 Accomplishments:**

- 4834 JSLSCAD - Initiated Production Qualification Testing and Initial Operational Test & Evaluation (PQT/IOT&E).
- 500 JSLSCAD - Continued technical data package and acquisition documentation for Milestone III (MSIII). All program documentation was reviewed and updated to support MS III. This included: Acquisition Strategy, Acquisition Baseline, Performance Specifications, and Environment Assessment. In Process Review (IPR) package preparation and coordination is also included.
- 957 JSLSCAD - Initiated the review and preparation of technical manuals, logistics support, and training materials. All logistics documentation to include: Technical Manuals; Integrated System Support Plans; and Logistics Support Plans will be updated based on test results. In addition, Materiel Fielding Plans, fielding schedules, and platform integration guides were prepared and approved.
- 2400 JSLSCAD - Completed the fabrication of 35 PQT/IOT&E test articles at \$100K each.

**Total** 8691

**FY 2003 Planned Program:**

- 11005 JSLSCAD - Continue PQT/IOT&E.
- 1000 JSLSCAD - Continue technical data package and acquisition documentation for MS III. All program documentation will be reviewed and updated to support MS III. This includes: Acquisition Strategy, Acquisition Baseline, Performance Specifications, and Environment Assessment. In Process Review (IPR) package preparation and coordination is also included.

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**FY 2003 Planned Program (Cont):**

- 1966 JSLSCAD - Continue the review and preparation of technical manuals, logistics support, and training materials. All logistics documentation to include: Technical Manuals, Integrated System Support Plans, and Logistics Support Plans will be updated based on test results. In addition, Materiel Fielding Plans, fielding schedules, and platform integration guides will be prepared and approved.

**Total 13971**

**FY 2004 Planned Program:**

- 2300 JSLSCAD - Complete PQT/IOT&E.
- 1414 JSLSCAD - Complete Technical Data Package and acquisition documentation for MS III. Prepare and coordinate In Process Review (IPR) package. Conduct MS III IPR.

**Total 3714**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT WARNING & REPORTING NETWORK (JWARN)	8426	8330	20847	8632
RDT&E Articles (Quantity)	0	0	0	0

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<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 4030 JWARN - Started Block II integration of NBC legacy and future detector systems. Initiated development of NBC warning and reporting modules and battlespace management modules for use by Joint Services C4I2 systems.</li> <li>• 3379 JWARN - Started Block II Modeling and Simulation for compatibility with the Joint Effect Model (JEM).</li> <li>• 1017 JWARN - Prepared integrated logistics support technical data and Test and Evaluation Master Plan (TEMP) for Block II.</li> </ul> <p><b>Total 8426</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 7405 JWARN - Continue Block II integration of NBC legacy and future detector systems and conduct DT I/Operational Assessment for full system requirements.</li> <li>• 925 JWARN - Prepare documentation for Block II MS C.</li> </ul> <p><b>Total 8330</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 18421 JWARN - Start Block III Software Development, award contract option.</li> <li>• 1728 JWARN - Conduct Development Testing (DT) and Operational Assessment (OA) for Block II.</li> <li>• 698 JWARN - Complete documentation for Block II Milestone C and conduct Block III Milestone C.</li> </ul> <p><b>Total 20847</b></p>		
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**FY 2005 Planned Program:**

- 7813 JWARN - Continue integration DT/OA for Block III.
- 819 JWARN - Prepare documentation for MS C for Block III and conduct MS C for Low Rate Initial Production (LRIP) decision.

**Total** 8632

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MOBILE CHEMICAL AGENT DETECTOR	0	4076	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 1000 MCAD - Continue agent testing at Dugway Proving Ground (DPG).
- 250 MCAD - Initiate environmental testing at White Sands Missile Range and Aberdeen Test Center.
- 2300 MCAD - Initiate outdoor simulant testing at DPG and NAVSEA.
- 526 MCAD - Initiate contractor support of outdoor simulant testing at DPG and NAVSEA.

**Total** 4076

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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Multi-Mission Sensors (MMS)	15000	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 4581 MMS - Initiated development of a Chemical/Biological (CB) algorithm and developed data inputs for various National Information Technology Networks.
- 2886 MMS - Initiated system engineering and program support.
- 7533 MMS - Initiated planning and execution of a series of statistical radar tests (Developmental Testing).

**Total** 15000

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
NBC Recon Vehicle	12303	3506	0	0
RDT&E Articles (Quantity)	4	0	0	0

**FY 2002 Accomplishments:**

- 1875 NBCRV - Conducted Modeling and Simulation (M&S) of human factors.

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**FY 2002 Accomplishments (Cont):**

- 5503 NBCRV - Continued sensor suite engineering development and built prototypes (four prototypes, estimated cost \$1.1M each).
- 2624 NBCRV - Continued integration of developmental detectors into vehicles.
- 2301 NBCRV - Conducted warfighter operational capability assessment.

**Total** 12303

**FY 2003 Planned Program:**

- 2204 NBCRV - Complete sensor suite engineering development and conduct Interim Progress Review to begin Low Rate Initial Production (LRIP) phase.
- 1302 NBCRV - Initiate and complete Production Qualification Test (PQT) and Early User Test (EUT).

**Total** 3506

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	934	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 934 SBIR

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**FY 2003 Planned Program (Cont):**  
**Total 934**

<b><u>C. Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
B96801 RADIAC - POCKET AN/UDR - 13	1989	0	0	0	0	0	0	0	0	1989
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	3442	3428	1949	0	0	0	0	8819
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	4730	0	7459	7651	16742	30711	24300	0	0	91593
JC1500 NBC RECON VEHICLE (NBCRV)	0	16202	23861	18459	24351	7956	0	0	0	90829
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	6926	6297	26981	26364	29506	25309	25700	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	3188	5291	0	0	0	0	0	0	0	8479
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	25878	0	0	0	0	0	0	0	0	25878

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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 (Cont):</u></b>	<u>FY 2002</u>	<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>
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	4000	27870	44806	65189	72296	79790	38880	38791	Cont	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	4644	4593	0	0	0	0	0	0	0	9237
S02201 IMPROVED CHEMICAL AGENT MONITOR (ICAM)	16261	376	0	0	0	0	0	0	0	16637
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	7099	0	15112	22740	38963	43743	43740	44126	Cont	Cont

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**D. Acquisition Strategy:**

ARTEMIS	Develop a system specification and issue a draft Request for Proposal (RFP) for Block I prior to Milestone (MS) B to resolve industry comments. Award a cost-type contract after MS B, for engineering development models in support of the System Development and Demonstration (SDD) phase. Conduct developmental testing and early operational assessments of engineering development models to ensure compliance with the Operational Requirements Document (ORD). After MS C, issue a fixed-fee contract for Low Rate Initial Production (LRIP) units to support Initial Operational Test & Evaluation (IOT&E). A Full Rate Production (FRP) option to this contract will be exercised after FRP Decision Review.
IBADS	In-house development, fabrication and fielding of 19 rapid prototypes.
JBPDS	The Joint Biological Point Detection System (JBPDS) uses a spiral development strategy to expedite fielding of a credible force protection strategy as quickly as possible to the Services, while ensuring that a process is in place to insert maturing technologies and lessons learned. 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.

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JBSDS	<p>The JBSDS will use an evolutionary acquisition strategy with phased developments for the JBSDS program supporting the time-phased JORD requirements. JBSDS will initially 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.</p>
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. JCAD System Design and Development (SDD) approval was given on 2 Dec 97. JCAD utilized acquisition reform initiatives to the fullest extent possible, to include contract award based on a performance specification, the use of a statement of objectives, and early industry involvement. Pre-SDD activities keyed on evaluation of promising technologies for JCAD applications. SDD contract source selection resulted in a 24 Feb 98 contract award to BAE SYSTEMS. BAE SYSTEMS baselined the detector unit at the Critical Design Review (CDR3) 26-27 Feb 02. The PMO modified the Acquisition Program Baseline (APB) 27 Jun 02. Milestone C, Low Rate Initial Production (LRIP), is projected for Jun 03. The Full Rate Production (FRP) decision is planned for Mar 05. The production contract will be sole-source and will include both LRIP &amp; FRP units IAW the program acquisition strategy.</p>

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JCSD	<p>The JCSD program will develop and test platform specific prototype laser interrogation of surface agents system. The development of the system is under contract with ITT Industries. Sole source contracts with ITT Industries will finalize the technical approach and increase the ruggedness of the prototype. The detector hardware will be miniaturized and be designed into a sealed unit. The control components of the system will be transition from commercially assembled controller and software packages into a militarized controller with formal software.</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>	
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 JWARS Block I and will provide initial tools &amp; data analysis to support CBD ORMS. Block II will further extend capabilities to include seaports of debarkation (SPODs) &amp; 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 &amp; 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>	
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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. Technical risk is considered low. Cost risk is considered moderate to low. Schedule risk is considered moderate to low. The System Development and Demonstration (SDD) phase is expected to be completed during 4QFY04, with the Full-Rate Production and Deployment phase expected to begin during 1QFY05. A Low Rate Initial Production Contract Award Decision, 14 M1113 HMMWV variants, is anticipated for 1QFY03. Initial Operational Capability (IOC), HMMWV variant, is expected during FY05 and FY06 for LAV. Full Operational Capability (FOC) is anticipated in FY13.</p>
JSLSCAD	<p>The JSLSCAD is in a five year developmental effort with General Dynamics - Armament Technical Product, DeLand, FL. Development includes ground, air, and sea based platforms. Production is scheduled to start after Milestone III in 3QFY04. Three follow-on production options are planned: the first option is to refurbish the EMD test units; the second option is for initial production; the third option is for full-scale production.</p>

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**JWARN** JWARN is a three block program plus a P3I. Block I (interim capability), which consisted of Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) NBC warning and reporting software, immediately satisfies many of the required capabilities outlined in the Joint Operational Requirements Document (JORD) and was fielded during FY98. Existing computers are be used to run the Block I software. Block II provides the capability to automatically send NBC messages at the GCCS level NBC software modules into the Services GCCS stakeholder systems. Detector/sensor information is input manually. Block II will initiate fielding during FY04. Block III will provide the full JWARN capability to provide the commanders with automatic reporting of NBC data from sensor/detector to C4ISR systems. For Blocks II and III, JWARN will use a commercial contractor to integrate COTS and/or GOTS-, NDI components.

**MCAD** The MCAD program will use a sole-source contract with Northrop Grumman to procure 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 will be conducted as a two-year, Congressionally requested effort. There will be a follow-on program based on the results of testing conducted at Dugway Proving Ground.

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MMS                      In accordance with Congressional Conference Committee report dated 19 July 02, the Program Executive Office for CB Defense has established a two-year effort to provide CB aerosol early warning capable Radio Detection and Ranging (RADAR) systems. The MMS program will coordinate, plan and execute a series of statistical radar tests to develop a CB algorithm and develop data inputs to various National Information Technology Networks to provide an early warning and hazard prediction capability. Fielding of the initial radar and Information Technology (IT) capability is scheduled for 30 Mar 04. Program products: (1) transportable CB algorithm for national and civilian RADAR systems installed in five cities, (2) Information technology network for early warning of a CB event, and (3) training and support package. Some of the Government agencies involved in the radar algorithm/software development are the National Weather Service (NWS), Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), National Severe Storm Laboratory (NSSL), and the PM NBCDS. In addition to those agencies there are some contractors participating in the radar tests: Advanced Design Corporation (ADC), Baron Services, Enterprise Electronics Corporation (EEC), and a federal funded laboratory, Lincoln Labs. The information technology aspect of the program involves the Intelligence Community Meta-Data Working Group, a multi-agency group that includes the Defense Intelligence Agency (DIA), Central Intelligence Agency (CIA), National Imagery and Mapping Agency (NIMA), National Security Agency (NSA), Central Measurements and Signals Intelligence Office (CMO), and the Federal Bureau of Investigation (FBI), among others.

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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 PM NBC Defense. Part II is an integration effort of the sensor suite into the Stryker IAV-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 Motors (GM) General Dynamics Land System (GDLS) LLC, Inc.

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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
<b>JBPDS</b>													
HW S - Detection & Identification Component Upgrades	C/CPFF	TBS	C	0	0	NONE	3400	2Q FY04	650	2Q FY05	0	4050	0
<b>JBSDS</b>													
SW SB - Develop Next Generation Prototype Technologies	C/CPFF	TBS	C	0	0	NONE	6400	2Q FY04	0	NONE	0	6400	0
HW S - Low Rate Initial Production of Initial JBSDS	C/CPFF	TBS	C	0	0	NONE	1350	2Q FY04	0	NONE	0	1350	0
HW S - Develop Next Generation Prototypes	C/CPFF	TBS	C	0	0	NONE	0	NONE	8572	1Q FY05	0	8572	0
<b>JCAD</b>													
HW/SW Development	C/CPAF	BAE SYSTEMS Inc, Austin, TX	C	36989	5915	Nov-02	0	NONE	0	NONE	0	42904	0
LRIP HW/SW Development	SS/FFP	BAE SYSTEMS Inc, Austin, TX	C	0	1160	3Q FY03	1297	3Q FY03	0	NONE	0	2457	0
<b>JCSD</b>													
HW S - System Development and Prototypes	SS/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	1200	1847	2Q FY03	0	NONE	0	NONE	0	3047	0
SW SB - Software Development	SS/CPFF	ITT Advanced Engineering & Sciences, Albuquerque, NM	C	442	584	2Q FY03	0	NONE	0	NONE	0	1026	0
<b>JEM</b>													
SW SB - Hazard Prediction Model - Formal Software Development	C/CPIF	TBD	C	0	0	NONE	5279	Feb-04	561	Jan-05	0	5840	5850

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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>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	1711	1Q FY03	5766	2Q FY04	5858	2Q FY05	0	13335	0
<b>JSLSCAD</b>													
SW S - Develop Software	C/CPFF	General Dynamics ATP, DeLand, FL	C	14975	1351	Nov-02	0	NONE	0	NONE	0	16326	11095
HW S - Design and Build Test Hardware	C/CPFF	General Dynamics ATP, DeLand, FL	C	37500	3594	1Q FY03	0	NONE	0	NONE	0	41094	0
<b>JWARN</b>													
SW S - JWARN Block II System Development and Demonstration Contract	C/FPI	TBS	C	0	3562	2Q FY03	15403	2Q FY04	3100	2Q FY05	0	22065	0
<b>NBCRV</b>													
HW S - NBCRS Sensor Suite Engineering Development; Fabricate Prototypes; Complete Development	C/CPFF	CACI Technologies Inc, Manassas, VA	C	9264	1303	Dec-02	0	NONE	0	NONE	0	10567	16401
<b>Subtotal I. Product Development:</b>				100370	21027		38895		18741		0	179033	

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BUDGET ACTIVITY <b>RDTE&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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I. Product Development - Cont.

Remarks: JSLSCAD - HW S - FY02 develop test articles, 35 PQT/IOTE articles at \$100,000 each. FY03 complete software. FY02 information changed due to contract schedule extension and Acquisition Program Baseline (APB) update.

NBCRV - HWS - FY00-FY03 sensor suite engineering development. FY02 prototype fabrication (four prototypes, estimated cost \$1.1M each). FY03 - complete development. HW GFPP - FY01 & FY02 provide sensor suite components to include Chemical Biological Mass Spectrometer (CBMS) and Joint Service Lightweight Chemical Agent Detector (JSLSCAD) to contractor - four each.

JBSDS - FY04 LRIP, four at \$500K each. FY05 advanced prototypes, 18 at \$375K each. FY05 Next Generation early prototypes, six at \$400K each.

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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	295	1Q FY04	279	1Q FY05	0	574	0
<b>JBPDS</b>													
ILS S - Plan & Develop Configuration Management	PO	PM NBCDS, APG, MD	U	0	0	NONE	1000	1Q FY04	800	1Q FY05	0	1800	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	50	1Q FY05	0	250	0
TD/D S - Modeling and Test Support	MIPR	NAVSEA/Johns Hopkins University, Baltimore, MD	N	0	0	NONE	600	1Q FY04	200	1Q FY05	0	800	0
ILS S - Develop Logistics Support Plan	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	983	1Q FY04	0	NONE	0	983	0
<b>JCAD</b>													
Technical Data and Logistics Support	MIPR	Various	U	1188	1370	Nov-02	1411	Nov-03	0	NONE	0	3969	0
<b>JCSD</b>													
ILS S - Initiate Logistics Planning	MIPR	PM NBCDS, APG, MD	U	50	50	1Q FY03	0	NONE	0	NONE	0	100	0
<b>JEM</b>													
ES S - IPT - System Engineering, Logistics, & Program Support	MIPR	Various	U	0	0	NONE	2171	Jan-04	0	NONE	0	2171	2171
<b>JSLNBCRS</b>													
ES C - CSS Support	C/FFP	Sverdrup, Dumfries, VA	C	1400	469	1Q FY03	700	1Q FY04	0	NONE	0	2569	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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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
ILS S - Technical Data Package/Integrated Logistics Support Spares Documentation	MIPR	Various	U	0	0	NONE	2000	1Q FY04	0	NONE	0	2000	0
<b>JSLSCAD</b>													
TD/D SB - JSLSCAD Evaluation of Engineering Changes	MIPR	PM NBCDS, APG, MD	U	1070	80	Nov-02	50	Nov-03	0	NONE	0	1200	870
TD/D SB - JSLSCAD ILS Analysis and Documentation	MIPR	PM NBCDS, APG, MD	U	2515	575	Nov-02	75	Nov-03	0	NONE	0	3165	2315
TD/D SB - JSLSCAD Technical Manuals and Documents	MIPR	PM NBCDS, APG, MD	U	740	580	Nov-02	0	NONE	0	NONE	0	1320	650
<b>Subtotal II. Support Costs:</b>				<b>6963</b>	<b>3124</b>		<b>9485</b>		<b>1329</b>		<b>0</b>	<b>20901</b>	

Remarks: JSLSCAD - Technical Documentation and Integrated Logistics Support also provided by Marine Corps, Quantico, VA and Navy, Naval Air Station, Patuxent River, MD

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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>													
OTHT C - Complete and Report USAF,USMC,USN IOT&E	MIPR	ATEC/AFOTEC, Washington, DC	U	0	0	NONE	1000	1Q FY04	0	NONE	0	1000	0
OTHT S - Production Qualification Test	MIPR	ATEC/AFOTEC, Washington, DC	U	0	0	NONE	0	NONE	1339	1Q FY05	0	1339	0
<b>JBSDS</b>													
OTE S - Operational Testing I	MIPR	Dugway Proving Ground, DPG, UT	U	0	0	NONE	1931	2Q FY04	0	NONE	0	1931	0
DTE S - Engineering Developmental Test Next Generation JBSDS	MIPR	Dugway Proving Ground, DPG, UT	U	0	0	NONE	0	NONE	3200	4Q FY05	0	3200	0
OTE S - Operational Testing I	MIPR	Operational Test Command, FT Hood, TX		0	0	NONE	1800	2Q FY04	0	NONE	0	1800	0
<b>JCAD</b>													
DTE S - JCAD Developmental Test (DT)	MIPR	Various Govt	U	10327	9397	Oct-02	0	NONE	0	NONE	0	19724	0
OTE S - JCAD Initial Operational Test & Evaluation (IOT&E) Supporting LRIP	MIPR	Various Govt	U	0	3949	Oct-02	5189	Oct-03	0	NONE	0	9138	0
<b>JCSD</b>													
DTE C - Engineering Design Test	MIPR	Dugway Proving Ground, DPG, UT	U	0	580	Feb-03	0	NONE	0	NONE	0	580	0
<b>JEM</b>													
DTE S - Hazard Prediction Model - Developmental Test	MIPR	Various	U	0	0	NONE	2510	Feb-04	0	NONE	0	2510	2510

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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
OTE S - Hazard Prediction Model - Operational Test	MIPR	Various	U	0	0	NONE	2375	May-04	0	NONE	0	2375	2375
OTHT S - Hazard Prediction Model - Independent Verification & Validation	C/FFP	TBS	C	0	0	NONE	240	Jan-03	0	NONE	0	240	240
<b>JOEF</b>													
DTE S - JOEF - Developmental Testing	MIPR	Various	U	0	0	NONE	0	NONE	720	May-05	0	720	720
OTE S - JOEF - Operational Testing	MIPR	Various	U	0	0	NONE	0	NONE	1008	Jun-05	250	1258	1258
OTHT S - JOEF - Independent Verification & Validation	C/FFP	TBS	C	0	0	NONE	0	NONE	750	Feb-05	500	1250	1250
<b>JSLNBCRS</b>													
OTHT SB - Conduct Limited User Test of HMMWV	MIPR	Various	U	2400	900	1Q FY03	0	NONE	0	NONE	0	3300	0
DTE S - HMMWV Variant Developmental Test - III	MIPR	Various	U	0	931	1Q FY03	0	NONE	0	NONE	0	931	0
OTE C - LAV and HMMWV Initial Operational Test & Evaluation	MIPR	Various	U	0	3089	3Q FY03	3800	1Q FY04	0	NONE	0	6889	0
OTHT SB - Developmental Testing for CBMS	MIPR	Dugway Proving Ground, Dugway, UT	U	0	0	NONE	200	2Q FY04	600	NONE	0	800	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>JSLSCAD</b>													
OTHT SB - JSLSCAD PQT/IOTE and Integration Test	MIPR	Various	U	8876	5546	Nov-02	2237	Nov-03	0	NONE	0	16659	9767
OTHT SB - Engineering Design Test, and Production Qualification Test and Initial Operational Test & Evaluation Support	MIPR	Various	C	4100	1000	Nov-02	0	NONE	0	NONE	0	5100	3464
<b>JWARN</b>													
OTHT SB - Developmental Test II /Operational Assessment Full requirements.	MIPR	Various	U	0	2125	2Q FY03	2062	2Q FY04	2859	2Q FY05	0	7046	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
DTE C - Contractor support Developmental Testing	C/CPFF	Northrup Grumman, Linthicum, MD	C	0	526	2Q FY03	0	NONE	0	NONE	0	526	0
<b>NBCRV</b>													
OTE S - Support Production Qualification Test/Early User Test	MIPR	PM NBCDS, APG, MD	U	2160	492	Dec-02	0	NONE	0	NONE	0	2652	3244
Subtotal III. Test and Evaluation:				27863	31985		23344		10476		750	94418	

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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.

Remarks: JSLSCAD - Test performers include: Aberdeen Proving Ground, APG, MD; Naval Air Station, Patuxent River, MD; NAVSEA, Dahlgren, VA; Eglin Air Force Base, FL; Yuma Proving Ground, AZ; White Sands Missile Range, NM; and Dugway Proving Ground, UT.

JBSDS - Developmental and Operational Testing of competing candidate systems.

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>IBADS</b>													
PM/MS S - Program Management/Program Manager Support	PO	JPO-BD, Falls Church, VA	U	0	0	NONE	15	1Q FY04	14	1Q FY05	0	29	0
<b>JBPDS</b>													
PM/MS S - Project Management	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	500	1Q FY04	150	1Q FY05	0	650	0
<b>JBSDS</b>													
PM/MS S - Program management/Management Support	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	1662	1Q FY04	2915	1Q FY05	0	4577	0
PM/MS S - Other Services (Army, Navy and Air Force)	MIPR	Various	U	0	0	NONE	1381	1Q FY04	700	1Q FY05	0	2081	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2003</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>		
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
JCAD													
PM/MS SB - Joint Service Support	MIPR	Various - Government/Contractor Support	U	4706	785	1Q FY03	1284	1Q FY04	0	NONE	0	6775	0
JCSD													
PM/MS S - Project Management	MIPR	PM NBCDS, APG, MD	U	79	142	1Q FY03	0	NONE	0	NONE	0	221	0
JEM													
PM/MS S - Program Office - Planning & Programming	MIPR	SPAWARSYSCOM, San Diego, CA	U	0	0	NONE	470	Jan-04	415	Jan-05	0	885	895
JSLNBCRS													
PM/MS C - Joint Service Integrated Product Team Support	MIPR	Various	U	1475	600	1Q FY03	1000	1Q FY04	0	NONE	0	3075	0
PM/MS SB - Project/Program Management for CBMS	PO	PMNBCDS, APG, MD	U	0	0	NONE	300	1Q FY04	300	1Q FY05	0	600	0
JSLSCAD													
PM/MS S - JSLSCAD - Core Team Salaries and Other Government Agencies Support Through Milestone III IPR.	MIPR	PM NBCDS, APG, MD and Other Service Support	U	3670	1245	Nov-02	1352	Nov-03	0	NONE	0	6267	2580
JWARN													
PM/MS C - Joint Integrated Product Team Support	MIPR	Various	U	2664	2643	1Q FY03	3382	1Q FY04	2673	1Q FY05	0	11362	0
MCAD													
PM/MS S - Planned Project Support	MIPR	PM NBCDS, APG, MD	U	0	100	2Q FY03	0	NONE	0	NONE	0	100	0

Project CA5

Exhibit R-3 (PE 0604384BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
NBCRV													
PM/MS S - Engineering Management	MIPR	PM NBCDS, APG, MD	U	4340	1711	Dec-02	0	NONE	0	NONE	0	6051	4197
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	934	1Q FY03	0	NONE	0	NONE	0	934	0
Subtotal IV. Management Services:				16934	8160		11346		7167		0	43607	

Remarks: NBCRV - Salaries and Other Government Agencies (OGAs).

JSLSCAD - Other Service Support includes Marine Corps, Quantico, VA, NAVSEA, Dahlgren, VA, Naval Air Station, Patuxent River, MD and Brooks Air Force Base, San Antonio, TX.

JBSDS - Integrated Product Team includes: Chemical School, FT Leonard Wood, MO; Brooks Air Force Base, San Antonio, TX; and Navy Surface Warfare Center, Dahlgren, VA.

<b>TOTAL PROJECT COST:</b>	152130	64296		83070		37713		750	337959
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## Exhibit R-4a, Schedule Profile

DATE  
**February 2003**

**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																																	
LRIP Phase 2 Start	1Q	—————	4Q																															
Block I Army IOT&E			4Q	—————	2Q																													
Multi Service IOT&E			4Q	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	2Q																		
Block I First Unit Equipped (FUE)							3Q	—————	1Q																									
JBSDS																																		
Initial JBSDS Tech Readiness Review				4Q																														
Initial JBSDS Milestone B							2Q																											
Initial JBSDS Competitive Test Fly-off							3Q																											
Initial JBSDS Developmental Testing							2Q																											
Initial JBSDS Milestone C											2Q																							
Initial JBSDS Initial Operational Test and Evaluation (IOT&E)															2Q	3Q																		
Initial JBSDS Production															1Q	—————	1Q																	
Initial JBSDS First Unit Equipped (FUE)															1Q																			

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

DATE **February 2003**

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)																																
Next Generation JBSDS Concept Exploration					1Q	—		4Q																								
Next Generation JBSDS Component Advanced Development									1Q	—		4Q																				
Next Generation JBSDS Milestone B													1Q																			
Next Generation JBSDS System Development and Demo														3Q	—					2Q												
Next Generation JBSDS Developmental Test (DT)/Operational Test (OT)															4Q	—		3Q														
Next Generation JBSDS Critical Design Review (CDR)																	2Q															
Next Generation JBSDS Milestone C																					3Q											
Next Generation JBSDS Low Rate Initial Production (LRIP)																						3Q	—	2Q								
Next Generation JBSDS Initial Operational Test and Evaluation (IOT&E)																									3Q	4Q						
Next Generation JBSDS Full Rate Production																													2Q	—	4Q	

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

DATE **February 2003**

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
JBSDS (Cont)																																
Next Generation JBSDS First Unit Equipped (FUE)																																4Q
JCAD																																
Systems Development & Demonstration (SDD) Contract	>>							3Q																								
Contractor Validation Test			3Q					2Q																								
Government Development Test				4Q								1Q																				
Milestone C (LRIP) Decision								3Q																								
Initial Operational Test & Evaluation								3Q				4Q																				
Full Rate Production Decision													1Q																			
JCSD																																
Fabricate Eng Prototypes (Generation I)	>>			4Q																												
R&D Contract Award (Generation II)				4Q																												
Lab/Field Testing (Generation I)								1Q																								
Fabricate Eng Prototypes Generation II								1Q				3Q																				
Lab/Field Testing (Generation II)								3Q				4Q																				
Fabricate Generation III Eng Prototypes								3Q				4Q																				
Production Qualification Test													1Q			4Q																

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

DATE **February 2003**

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
JCSD (Cont)																																
Limited User Test (LUT)																1Q																
Milestone C																2Q																
JEM																																
BLK I - Interim Progress Review									1Q																							
BLK I - Developmental Testing									2Q																							
BLK I - Operational Assessment (OA)									2Q																							
BLK I - Milestone C (Limited Deployment)									3Q																							
BLK I - Production and Deployment									3Q	—	2Q																					
BLK I - Developmental Test (DT)									4Q																							
BLK I - Operational Testing (OT)												1Q																				
BLK I - Full Rate Production Review												2Q																				
BLK I - Initial Operational Capability (IOC)												2Q																				
BLK I - Post Deployment Software Support													3Q	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
JSLNBCRS																																
Development Testing II (HMMWV)				3Q 4Q																												

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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)						3Q																										
Developmental Test I (DT I) LAV variant						3Q	4Q																									
Initial Operational Test and Evaluation (IOT&E) for High Mobility Multipurpose Wheeled Vehicle (HMMWV) and the LAV						3Q		1Q																								
Milestone C Full Rate Production (FRP)										3Q																						
Chemical test CBMS II			3Q			1Q																										
Developmental Testing CBMS II										3Q						3Q																
JSLSCAD																																
Production Qualification Test (PQT)/Initial Operational Test and Evaluation (IOT&E)			3Q									1Q																				
Complete Test and Operational Documentation											2Q																					
Joint Service Milestone III In Process Review (IPR)											3Q																					

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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
JWARN																																
Block II System Demonstration and Development (SDD) Contract Award							2Q																									
Block II Developmental Test/Operational Assessment							4Q	— 2Q																								
Block II Milestone C											3Q																					
Block III Software Development Contract Award							3Q																									
Block III DT/OA															3Q 4Q																	
Block III Milestone C															4Q																	
Block III LRIP Contract Award																			1Q 2Q													
Block III Production Contract Option																			2Q 3Q													
MCAD																																
Initiate agent and interference testing							1Q 2Q																									
Initiate urban interference trials							2Q																									
Environmental Trials							2Q 3Q																									
Field Trials							2Q	— 4Q																								
MMS																																
Program Prep & Data Analysis (SDT)							4Q	— 2Q																								
CONOPS Development							1Q	— 4Q																								

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

**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
MMS (Cont)																																
Test Location Surveys				4Q																												
Statistical Radar Test Planning					1Q																											
Statistical Radar Test Execution								3Q																								
Data Analysis								3Q																								
Down Select Support							2Q	3Q																								
Algorithm/Software Development							3Q	<del>2Q</del>																								
Training & Logistics Development							2Q	<del>3Q</del>																								
Information Technology							2Q	<del>2Q</del>																								
Deliverable Systems (Software Pkg)											2Q	3Q																				
NBCRV																																
Fabricate Engineering Prototypes				>>	<del>2Q</del>																											
Production Qualification Test							3Q	<del>1Q</del>																								
NBCRV Initial Production In Process Review (IPR) - Milestone C									1Q																							
NBCRV Production Verification Test													1Q	<del>4Q</del>																		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM5      WMD - CIVIL SUPPORT TEAM (SDD)	0	977	984	14202	390	0	0	0	0	16553

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

**Project CM5 WMD - CIVIL SUPPORT TEAM (SDD):** Program funds the development of the Unified Command Suite (UCS) and Analytical Laboratory System (ALS) Block upgrades. This funding profile provides the resources for the modernization to address the WMD CSTs objective operational capabilities and the United States Army Reserve (USAR) Recon/Decon Teams. It provides full funding for: (1) type-classified protection, detection, modeling/simulation 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 to successfully execute the Consequence Management RDA program. WMD CSTs and USAR Recon/Decon Teams would receive the systems developed and procured under this program in accordance with the Joint Service Agreement for Chemical and Biological Defense Program Management.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	0	963	984	14202
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2003 Planned Program:**

- 500 WMD CST- Initiate development of Unified Command Suite (UCS) and Analytical Laboratory System (ALS) upgrades.
- 463 WMD CST - Initiate support and planning for UCS and ALS upgrade program.

**Total** 963

**FY 2004 Planned Program:**

- 984 WMD CST- Continue development of UCS and ALS upgrades.

**Total** 984

**FY 2005 Planned Program:**

- 1600 WMD CST- Initiate Developmental Test 2 (DT2) for UCS and ALS.
- 7502 WMD CST- Initiate Initial Operational Test and Evaluation (IOT&E).
- 5100 WMD CST- Continue development of UCS and ALS upgrades.

**Total** 14202

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	14	0	0
RDT&E Articles (Quantity)	0	0	0	0

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 2003 Planned Program:**

- 14 SBIR

**Total 14**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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 WMD - CIVIL SUPPORT TEAM (RDT&E MGT SUPPORT)	0	1555	1574	1568	1559	1555	0	0	0	7811
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	25000	18647	7858	2983	43270	1560	0	0	0	99318

Project CM5/Line No: 083

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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:**

WMD CST

This program utilizes multiple acquisition vehicles: 1) This program funds for the acquisition of Chemical and Biological Defense equipment as outlined in the Defense Reform Directive #25 (DRID #25); 2) Uses existing contract vehicles to 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 Operational Test and Evaluation (OT&E) of entire WMD-CST and its equipment in FY03.; 4) Initiate system improvement upgrades in FY03 of Unified Command Suite (UCS) and ALS systems to incorporate technology insertion via to be selected contracts, conduct Developmental Test (DT) and Initial Operational Test and Evaluation (IOTE) of prototype systems and produce system improvement/enhancement upgrades; 5) 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; 6) Continue US Army Reserve (USAR) type-classified chemical biological (CB) equipment refurbishment.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
WMD CST													
HW S - Development Upgrades Unified Command Suite and Analytical Lab Sys	C/CPFF	TBS	U	0	900	2Q FY03	900	2Q FY04	900	2Q FY05	0	2700	0
HW S - Development Upgrades Unified Command Suite	C/CPFF	TBS	C	0	0	NONE	0	NONE	2000	2Q FY05	0	2000	0
HW S - Development Upgrades Analytical Lab Sys	C/CPFF	TBS	C	0	0	NONE	0	NONE	2000	2Q FY05	0	2000	0
Subtotal I. Product Development:				0	900		900		4900		0	6700	

Remarks:

II. Support Costs: Not applicable

Project CM5



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
WMD CST													
PM/MS S - Management Services	MIPR	PM NBCDS, APG, MD	U	0	63	1Q FY03	84	1Q FY04	302	1Q FY05	0	449	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	14	1Q FY03	0	NONE	0	NONE	0	14	0
Subtotal IV. Management Services:				0	77		84		302		0	463	

Remarks:

<b>TOTAL PROJECT COST:</b>	0	977		984		14202		0	16163
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## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**CM5**

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
WMD CST																																
ALS SEP Prototype Fabrication			3Q	4Q																												
ALS & UCS Upgrade Market Survey					1Q	2Q																										
ALS & UCS Upgrade MS B					2Q																											
ALS & UCS Upgrade Design					2Q	<del>3Q</del>		1Q																								
ALS & UCS Upgrade Initial Prototype									1Q	2Q																						
ALS & UCS Upgrade DT I									2Q	3Q																						
ALS & UCS Upgrade EUT&E									3Q	4Q																						
ALS & UCS Upgrade IOT&E Fabrication									4Q	<del>1Q</del>	2Q																					
ALS & UCS Upgrade DT II											2Q	3Q																				
WMD System Level IOT&E											3Q	4Q																				
ALS& UCS Upgrade MS C Full Rate Production (FRP)												4Q																				

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CO5 COLLECTIVE PROTECTION (SDD)	8440	4200	2954	2582	4129	4585	2669	2720	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 & 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. As Techbase Non-Medical Collective Protection efforts become mature, they will be transitioned into the following SD&ED efforts.

Systems funded under this project are: (1) Chemical Biological Protective System (CBPS) P3I; (2) Joint Collective Protection Equipment (JCPE); (3) Joint Transportable Collective Protection System (JTCOPS); and (4) Shipboard Collective Protection Equipment (SCPE).

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>

The CBPS-P3I will improve the operational suitability and reliability of the CBPS for light divisions, currently in production. This phase of the P3I will develop a self-sustained Environmental Support System (ESS) that does not require the HMMWV engine for power. This results in the reduction of fuel consumption, vehicle maintenance, and sustainment costs. To improve operational capability, the resulting weight reductions will be implemented to allow more medical equipment to be transported inside the CBPS. Improvements will be made to the CB tent using lightweight, low cost CB materials being developed in R&D. All these improvements will be available for incorporation into the CBPS production line in FY05 following a Production Verification Test. It will also provide a capability to address the critical need for collective protection within Level 1 and 2 Heavy and Airborne units. Currently, no capability exists to provide medical treatment in a CB contaminated environment for these types of units. The self-sustained ESS and CB tent of CBPS-light will be used to maximize commonality of components. These components will be integrated onto platforms suitable for Airborne and Heavy divisions. The CBPS P3I will have three phases: Phase 1: Develop design concepts and fabricate prototype ESS; Phase 2: Fabricate two ESS prototypes for integration onto each of three CBPS platforms; and Phase 3: Integrate ESS modules onto platforms for use in Light, Heavy and Airborne prototype systems.

The JCPE program will provide 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. JCPE will focus on fixing specific problems and deficiencies with currently fielded CPS 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 are limited to providing improvements in the form of CBR-D capability sets to 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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 Joint Transportable Collective Protection System (JTCOPS) will be a modular shelter system that will provide the ability to process contaminated personnel through a Contamination Control Area into a Toxic Free Area, and will be expandable to meet changing mission needs. It will allow collectively protected vehicles/vans to be connected for safe personnel ingress/egress. The system will include air filtration, environmental control, and power generation elements, and will be capable of using other available generator/power systems.

The SCPE program provides an NBC free environment within specified zone boundaries of high priority ships by over pressurization with filtered air. Two of the major goals of this program are to develop a high efficiency, quiet Collective Protection System (CPS) fan rotor, and extend the service life of shipboard High Efficiency Particulate Air (HEPA) filters. Current efforts are focused on extending the service life of HEPA filters from three years to four years. The program will continue testing of collective protection system components that decrease Total Ownership Costs (TOC), reduce shipboard maintenance requirements, and provide energy-efficient equipment.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CB PROTECTIVE SHELTER/P3I	780	1376	0	0
RDT&E Articles (Quantity)	0	2	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2002 Accomplishments:**

- 480 CBPS P3I - Initiated design concept for CBPS airborne and heavy versions interfaced with non-HMMWV platforms suitable for airborne and other applications. Coordinated with user and field representatives on requirements and logistics supportability. Developed Statement of Work (SOW) for design and fabrication of Environmental Support System (ESS).
- 300 CBPS P3I - Awarded contract for design and fabrication of a self-powered ESS that will meet the requirements for CBPS-light, heavy, and airborne versions. Continued development of virtual prototype and limited Technical Data Package.

**Total** 780

**FY 2003 Planned Program:**

- 829 CBPS P3I - Fabricate two ESS prototypes at unit cost of \$250K, finalize design and complete Technical Data Package.
- 200 CBPS P3I - Conduct performance testing on one ESS prototype.
- 347 CBPS P3I - Finalize design concept for ESS and document in technical data package. Integrate ESS onto non vehicle based platform. Manage CBPS P3I.

**Total** 1376

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT COLLECTIVE PROTECTION EQUIPMENT	6543	2104	2954	2582
RDT&E Articles (Quantity)	0	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>

**FY 2002 Accomplishments:**

- 1875 JCPE - Initiated development and testing of one improved recirculation filter unit to reduce logistics costs. Initiated development and testing of noise reduction and abatement for Chemical Biological (CB) shelter systems utilizing sound barriers. Initiated testing of 30 in service 100/200 Cubic Feet per Minute (CFM) gas filters to determine service life. Initiated testing of ten improved 100/200 CFM gas filters with live agents to complete qualification of filter design. Initiated development and testing of 2000 CFM particulate filters to reduce logistics costs. Completed development and testing of a pleatable charcoal/High Efficiency Particulate Absorbing (HEPA) bonded filter to replace two CB filters used in collective protection systems to reduce installation time, logistics, and cost.
- 1519 JCPE - Completed study investigating the viability of permanent bar magnet and variable speed drives to improve the efficiency of shipboard Collective Protective System (CPS) supply fan motors to allow the CPS system to operate at peak performance over the entire range of filter loading. Continued development and testing of Fan Filter Assembly (FFA) 400-100 and M93 Modular Collective Protection Equipment (MCPE) candidate motorblowers for CB shelter systems to improve efficiency, reliability, size, and weight. Initiated development and testing of automatic power transfer switch for Collective Protection Expeditionary Medical Support (CPEMEDS). Completed development and testing of a modified Environmental Control Unit (ECU) for CPEMEDS to allow rapid deployment of a reduced weight and size unit. Initiated design and test of CP modification kit for fielded heater systems. Initiated design and testing to reduce the CB filter blower heat load. Initiated study to investigate ECU and power applications to CP shelters.

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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 2002 Accomplishments (Cont):**

- 2209 JCPE - Initiated development of a modified M28 liner for large capacity shelters. Initiated design and testing of the thermal efficiency of CB protected shelter systems. Initiated testing of CB liners for long term storage in temperature extremes and alternate seam configurations. Initiated development and testing a CB liner seam tester. Initiated development and testing of a improved repair process for CB liners. Initiated design and testing of an improved liner material, construction, and enclosures.
- 940 JCPE - Initiated development of a suite of improved airlocks to reduce purge times and simultaneous entry/exits for all existing CB shelter systems. Initiated study to determine the contamination control area requirements that meet NATO standards. Initiated development of logistical support plan for prior JCPE items. Initiated the system engineering of capability sets with improved components. Continued development and testing of a CP latrine for CPEMEDS.

**Total** 6543

**FY 2003 Planned Program:**

- 937 JCPE - Complete development of 2000 CFM particulate filters to reduce logistics costs. Complete live agent testing of improved 100/200 CFM gas filters. Complete development and testing of one improved recirculation filter unit to reduce logistics costs. Complete development and testing of noise reduction and abatement for CB shelter systems utilizing sound barriers. Complete testing of 30 in service 100/200 CFM gas filters to determine service life. Complete design and testing of the thermal efficiency of CB protected shelter systems.

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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 Planned Program (Cont):**

- 550 JCPE - Perform development and testing to increase efficiency of CPS supply fan motors to operate at peak performance over the entire range of filter loading. Complete development and testing of Fan Filter Assembly (FFA) 400-100 and M93 Modular Collective Protection Equipment (MCPE) candidate motorblowers for CB shelter systems to improve efficiency, reliability, size, and weight. Continue development of a suite of improved airlocks to reduce purge times and provide simultaneous entry/exits for all existing CB shelter systems. Complete study to determine the contamination control area requirements that meet NATO standards. Complete development of logistical support plan for prior JCPE items. Continue the system engineering of capability sets with improved components.
  
- 617 JCPE - Complete development of a modified M28 liner for large capacity shelters. Continue design and testing of an improved liner material, construction, and enclosures. Complete development and testing of automatic power transfer switch for CPEMEDS. Complete design and test of CP modification kit for fielded heater systems. Complete design and testing to reduce the CB filter blower heat load. Complete study to investigate ECU and power applications to CP shelters. Continue testing of CB liners for long term storage in temperature extremes and alternate seam configurations. Complete development and testing a CB liner seam tester. Complete development and testing of a improved repair process for CB liners. Complete development and testing of a CP latrine for CPEMEDS.

**Total**    2104

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ 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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**FY 2004 Planned Program:**

- 722 JCPE - Complete development and testing to increase efficiency of CPS supply fan motors to operate at peak performance over the entire range of filter loading. Initiate development of shipboard CP improvements to reduce total operating costs.
- 1725 JCPE - Complete testing of developmental prototypes of a suite of improved airlocks to reduce purge times and simultaneous entry/exits for all existing CB shelter systems. Complete design and testing of an improved liner material, construction, and enclosures.
- 507 JCPE - Complete testing of CB liners for long term storage in temperature extremes. Initiate development and testing of 10 modified 100/200 CFM gas filters to provide Toxic Industrial Chemicals (TICs) protection. Complete the system engineering of capability sets with improved components.

**Total** 2954

**FY 2005 Planned Program:**

- 1248 JCPE - Complete development and testing of 10 modified 100/200 CFM gas filters to provide TICs protection. Initiate development and testing of a temporary filter for ship intakes. Initiate development and testing of reducing degradation of particulate media by TICs. Initiate development and testing of a residual life indicator.
- 417 JCPE - Initiate development and testing of improvements to the lightweight ECU.
- 917 JCPE - Continue development of shipboard CP improvements to reduce total operating costs.

**Total** 2582

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER	420	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 420 JTCOPS - Continued preparation of program documentation including the Single Acquisition Management Plan, the System Requirements Document, and the Life Cycle Cost Assessment. Continued engineering support, and conducted program management activities.

**Total**     420

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SHIPBOARD COLL PROTECTION EQUIP	697	660	0	0
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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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**FY 2002 Accomplishments:**

- 697 SCPE - Continued shipboard testing of improved CPS fan rotor to verify actual noise reduction in a fan room and adjacent manned spaces on board ship. Revised CPS fan rotor performance specification. Improved CPS fan rotors to increase efficiency and reduce noise levels by 12 to 17 decibels. Completed third year of verification testing to validate the four-year performance of improved prefilters and HEPA filters. Began testing and evaluation of HEPA filter performance degradation after TICs/Toxic Industrial Materials (TIMs) exposure. Continued development and testing of two electronic differential pressure gauges for remote reading to improve shipboard CPS maintenance.

**Total** 697

**FY 2003 Planned Program:**

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

**Total** 660

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	60	0	0
RDT&E Articles (Quantity)	0	0	0	0

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE February 2003
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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 Planned Program:**

- 60 SBIR

**Total 60**

<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
JCP001 COLLECTIVELY PROTECTED DEPLOYABLE MEDICAL SYSTEM	2980	1077	0	0	0	0	0	0	0	4057
JF0102 TRANSPORTABLE COLLECTIVE PROT SYS	0	0	0	0	0	0	0	0	0	0
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT (CPS BACKFIT)	17611	17057	14732	16250	11105	7388	0	0	0	84143
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT (JCPE)	2366	1353	1893	2188	2047	1800	2916	0	0	14563
R12301 CB PROTECTIVE SHELTER (CBPS)	24387	28587	983	0	16282	29744	29646	30724	Cont	Cont

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**D. Acquisition Strategy:**

CBPS                      Based on urgent need, limited procurement was authorized for the production of up to 152 systems prior to MS III. A logistics demonstration, first article testing, and IOTE-Phase I were conducted in FY98. IOTE-Phase I identified the need for various system and doctrinal improvements. To support TC-STD, a RAM Qualification Test and Limited User Test and Evaluation (LUTE) were conducted Jul-Nov 00. A MS III was conducted Jun 02 that recommended approval for full production. Approval was granted Nov 02 for MSIII.

First Unit Equipped is scheduled for Apr 03, fielding to Level I and Level II medical units and Forward Surgical Teams.

The CBPS P3I program was initiated in FY02 to improve the current version of CBPS and develop versions suitable for forward deployed medical units within airborne/air assault and heavy divisions. An up front analysis will be performed to develop design concepts for heavy and airborne versions of CBPS. A contract is in place to develop a self-sustained ESS that does not require an external primary power source. An ESS prototype will be fabricated and subjected to performance and reliability testing. The design will be finalized and two ESS prototypes will be fabricated. One will be integrated with the current version of CBPS with other weight reductions incorporated. The remaining ESS will be integrated onto a platform suitable for use in airborne/air assault and heavy divisions determined through the up front analysis.

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JCPE	<p>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. The JCPE program goal is to execute as many distinct deficiency corrections and improvements as possible within funding constraints. The Navy PM conducts In-Process Reviews (IPR) and is the decision authority for this product improvement program. JCPE solicits inputs from the four Services through a Joint Service management IPT process that evaluates the proposals, prioritizes, and recommends a list of the tasks to the Navy PM for review and approval annually. System improvements, after successful prototyping 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.</p>	
JTCOPS	<p>JTCOPS will develop a new collective protection capability. A competitive contract will be awarded for the design and prototype fabrication phase, with options for Low Rate Initial Production (LRIP). After successful completion of development testing and the Milestone (MS) B decision, the LRIP option will be exercised to produce systems for Operational Testing (OT). After completion of OT and the MS C decision, the production option of the contract will be exercised.</p>	
SCPE	<p>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 &amp; Maintenance, Navy (O&amp;M,N) funds.</p>	
Project CO5/Line No: 083		Exhibit R-2a (PE 0604384BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2003</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>		
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>CBPS</b>													
HW SB - Contractor Hardware Development	C/CPFF	Radian, Inc, Alexandria, VA	C	300	829	Dec-02	0	NONE	0	NONE	0	1129	0
HW SB - Hardware Development	MIPR	Red River Army Depot, Texarkana, TX ; CECOM, Ft Monmouth, NJ	U	259	0	NONE	0	NONE	0	NONE	0	259	0
<b>JCPE</b>													
HWSB - Modified 100/200 CFM Filter for TICs - Development & Engineering	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	150	Dec-03	23	Dec-04	0	173	173
HW C - 2000 CFM Particulate Filter - Improvements	WR	NSWCDD, Dahlgren, VA	U	226	95	Dec-02	0	NONE	0	NONE	0	321	321
SW SB - Capability Sets	MIPR	Various	U	150	20	Dec-02	200	Dec-03	0	NONE	0	370	370
HW C - Improved Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	400	0	NONE	50	Dec-03	0	NONE	0	450	450
SW SB - Development of Modified M28 Liner System for Large Capacity Shelter	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	400	90	Dec-02	0	NONE	0	NONE	0	490	490
SW SB - Shipboard CPS Supply fans - Development	WR	NSWCDD, Dahlgren, VA	U	0	153	Dec-02	0	NONE	0	NONE	0	153	153
SW SB - Improved Liner - Materials/Construction/Closures	MIPR	SBCCOM, Natick, MA	U	600	122	Dec-02	229	Dec-03	0	NONE	0	951	951

Project CO5

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Exhibit R-3 (PE 0604384BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>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 - Thermal Efficiency of CB Protected Shelter Systems	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	75	25	Dec-02	0	NONE	0	NONE	0	100	100
HW C - Shipboard CP Improvements	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	288	Jan-04	500	Dec-04	0	788	788
HW C - Residual Life Indicator	MIPR	SBCCOM, Edgewood, MD	U	0	0	NONE	0	NONE	213	Dec-04	400	613	613
HW C - Temporary Filter for Ship Intake	WR	NSWCDD, Dahlgren, VA		0	0	NONE	0	NONE	300	Dec-04	200	500	500
HW C - Lightweight Environmental Control Unit Improvements	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	0	NONE	0	NONE	300	Dec-04	100	400	400
HW C - Particulate Media Degradation by TICs	WR	NSWCDD Dahlgren, VA	U	0	0	NONE	0	NONE	500	Dec-04	400	900	900
<b>SCPE</b>													
SW SB - CPS Fan, Electronic Differential Pressure Gauge, Filter Performance - Development	WR	NSWCDD, Dahlgren, VA	U	175	91	Dec-02	0	NONE	0	NONE	0	266	266
<b>Subtotal I. Product Development:</b>				<b>2585</b>	<b>1425</b>		<b>917</b>		<b>1836</b>		<b>1100</b>	<b>7863</b>	

Remarks:

Project CO5



**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2003</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>		
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>CBPS</b>													
DTE S - Shelter - Development Test and Evaluation	MIPR	DTC, APG, MD	U	0	200	Apr-03	0	NONE	0	NONE	0	200	0
<b>JCPE</b>													
OTHT C - 100/200 CFM Gas Filter - Live Agent Testing	MIPR	SBCCOM, APG, MD	U	388	301	Dec-02	0	NONE	0	NONE	0	689	689
OTHT C - Shipboard CPS Supply Fans	WR	NSWCDD, Dahlgren, VA	U	0	200	Dec-02	0	NONE	0	NONE	0	200	200
OTHT SB - Modified M28 Liner System for Large Capacity Shelters	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	100	Dec-02	0	NONE	0	NONE	0	100	100
OTHT C - Modified 100/200 CFM Filters for TICs	MIPR	SBCCOM, APG, MD	U	0	0	NONE	50	Dec-03	96	Dec-04	150	296	296
OTHT SB - Capability Sets	MIPR	Various	U	675	250	Dec-02	241	Dec-03	0	NONE	0	1166	1166
OTHT C - 2000 CFM Particulate Filter	MIPR	SBCCOM, Edgewood, MD	U	150	275	Dec-02	0	NONE	0	NONE	0	425	425
OTHT C - Improved Airlock	MIPR	HSW/YACN Brooks AFB, San Antonio, TX	U	0	25	Dec-02	350	Dec-03	0	NONE	0	375	375
OTHT C - Improved Liner Materials/Construction/Closures	MIPR	SBCCOM, Natick, MA	U	0	60	Dec-02	971	Dec-03	0	NONE	0	1031	1031
OTHT C - Shipboard Collective Protection Improvements	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	300	Dec-04	0	300	300
<b>SCPE</b>													
OTHT SB - Improved CPS Fan - Shipboard Testing	WR	NSWCDD, Dahlgren, VA	U	229	138	Dec-02	0	NONE	0	NONE	0	367	367

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>CO5</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
CBPS													
PM/MS S - Management Support	MIPR	PM NBCDS, Natick, MA	U	24	25	Oct-02	0	NONE	0	NONE	0	49	0
JCPE													
PM/MS S - Overall Program Management and Integrated Product Team Oversight	WR	NSWCDD, Dahlgren, VA	U	729	174	Dec-02	250	Dec-03	250	Dec-04	0	1403	1403
PM/MS S - Integrated Product Team Support	MIPR	Various	U	456	164	Dec-02	100	Dec-03	100	Dec-04	0	820	820
JTCOPS													
PM/MS S - Preparation of Acquisition Documentation	MIPR	PM NBCDS, APG, MD		420	0	NONE	0	NONE	0	NONE	0	420	0
SCPE													
PM/MS S - Overall Program Management	WR	NSWCDD, Dahlgren, VA	U	395	95	Dec-02	0	NONE	0	NONE	0	490	490
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	60	1Q FY03	0	NONE	0	NONE	0	60	0
Subtotal IV. Management Services:				2024	518		350		350		0	3242	

Remarks:

Project CO5

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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>CO5</b>
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TOTAL PROJECT COST:	9117	4200		2954		2582		1250	20103
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**Exhibit R-4a, Schedule Profile**

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**CO5**

<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
CBPS																																
CBPS P3I- Award Contract for Design and Virtual Prototyping			3Q					2Q																								
CBPS P3I- Award Contract Option to Fabricate Two Prototypes & integrate onto vehicle and trailer platforms								3Q 4Q																								
CBPS P3I- Conduct Performance Testing								4Q 1Q																								
JCPE																																
Develop & Test Modified M28 Liner for CPEMEDS				>>				2Q																								
Develop & Test FIF Packaging and Housing Improvements				>>				3Q																								
Develop & Test Improved 200 CFM Particulate Filter				>>				3Q																								
Develop & Test Modified Environmental Control Unit for CPEMEDS				>>				3Q																								
Develop Improved 100/200 CFM Gas Filters				>>				3Q																								
Market Survey & Testing of CP Latrine for CPEMEDS				>>				2Q																								

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

**PE NUMBER AND TITLE**  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)**      **PROJECT**  
**CO5**

<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)																																
Develop & Test Pleatable Charcoal/High Efficiency Particulate Arresting (HEPA) Bonded Filter	>>			4Q																												
Market Study to Increase Efficiency of Shipboard CPS Supply Fan Motors	1Q			4Q																												
Develop & Test FFA400-100 and M93 MCPE	>>							4Q																								
Agent Testing of 100/200 CFM Gas Filters	1Q							4Q																								
Develop Modified M28 Liner System for Large Capacity Shelters	1Q							4Q																								
Develop & Test 2000 CFM Particulate Filters	1Q							4Q																								
Develop Thermal Efficiency of CB Protected Shelter Systems			3Q					4Q																								
Develop Capability Sets			3Q									4Q																				
Develop Improved Airlock			3Q									4Q																				
Develop Improved Liner - Materials/Construction/Closures			3Q									4Q																				

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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>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)																																	
Develop & Test Efficiency Improvement to Shipboard CPS Supply Fan Motors					1Q	—————			4Q																								
Develop & Test Modified 100/200 CFM Gas Filters for TICs.									1Q	—————			4Q																				
Residual Life Indicator													1Q	—————			4Q																
Develop Temporary Filter for Ship Intake													1Q	—————			4Q																
Develop Lightweight ECU Improvements													1Q	—————			4Q																
Particulate Media Degradation by TICs													1Q	—————			4Q																
Develop Shipboard CP Improvements													1Q	—————											4Q								
JTCOPS																																	
Award Development Contract								3Q																									
Design and Fabricate Prototypes for Development Test (DT)								3Q	—————			4Q																					
SCPE																																	
Define CPS Fan Performance Specification	>>	—————			4Q																												
Fan Testing & Evaluation (Shipboard)	>>	—————			4Q																												
Develop and Test Electronic Differential Pressure Gauge	>>	—————			4Q																												

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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>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
SCPE (Cont)																																
CPS Filter TICs/TIMs Evaluation	>>	—————												4Q																		

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
DE5 DECONTAMINATION SYSTEMS (SDD)	2246	4859	11332	3327	5725	5423	9915	4776	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 program is divided into four blocks. Block I will field improved decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators and containment systems required to enhance the servicemembers decontamination capability. Block III will provide Food and Drug Administration (FDA) approved skin decontaminants that have the capability to decontaminate casualties with open wounds. Block IV will insert technology as it matures to the point of being cost effective to provide substantial enhancement to the warfighters decontamination capability.

In late FY02 U.S. Central Command (CENTCOM) identified an Urgent Need Statement (UNS) for a more environmentally friendly decontaminant. Upon validation of this requirement, the JSFDS program procured and tested DF-200 (Department of Energy) decontaminant to meet this need.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS FAMILY OF DECON SYSTEMS (JSFDS)	2246	4788	11332	3327
RDT&E Articles (Quantity)	0	0	245	0

**FY 2002 Accomplishments:**

- 1700 JSFDS - Conducted Developmental Testing (DT) of the decontaminant to satisfy CENTCOM UNS, including chemical and biological live agent, environmental compatibility, and packaging tests.
- 206 JSFDS - Conducted detail test planning, program support, environmental and safety studies.
- 340 JSFDS - Conducted Operational Testing (OT) of the decontaminant to satisfy CENTCOM UNS.

**Total** 2246

**FY 2003 Planned Program:**

- 40 JSFDS - Complete OT report for decontaminant to satisfy CENTCOM UNS.
- 600 JSFDS - Complete Developmental Test and Evaluation (DT&E) animal safety studies and preliminary animal efficacy studies for Block III skin decontaminants.
- 1200 JSFDS - Conduct detail test planning and procure decontaminants for testing for Block I (approximately 8,000 gallons at average cost of \$18 per gallon).

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 Planned Program (Cont):**

- 634 JSFDS - Initiate OT&E for Block I for improve decontaminants to support a Milestone III.
- 1244 JSFDS - Conduct DT I and initiate DT II test for Block I decontaminant and update program documentation. Conduct optimization/feasibility testing of various Block I decontaminant applicators to support Block II performance specifications development.
- 1070 JSFDS - Initiate DT II for Block III Skin decontaminants to generate data to support Food and Drug Administration (FDA) approval.

**Total** 4788

**FY 2004 Planned Program:**

- 1201 JSFDS - Complete OT&E for Block I decontaminants. Conduct MS III to support procurement decision.
- 5700 JSFDS - Procure Block II applicator and containment systems for lab testing and Operational Assessment (AO) (200 systems at average cost of \$25K each).
- 1267 JSFDS - Conduct lab testing and operational assessment and downselect the candidates to take to DT/OT.
- 1764 JSFDS - Procure Block II applicator and containment systems for DT testing (45 systems at average cost of \$36K).
- 1400 JSFDS - Continue DT II testing of Block III skin decontaminants to generate data to support FDA approval.

**Total** 11332

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2005 Planned Program:**

- 1100 JSFDS - Conduct and complete DT and conduct OT for Block II applicator and containment systems (OT systems procured under Low Rate Initial Production procurement contract).
- 1930 JSFDS - Continue DT II for Block III skin decontaminants to generate data to support FDA approval.
- 297 JSFDS - Update program documentation and conduct MS C for Block II applicator and containment systems.

**Total** 3327

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	71	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 71 SBIR

**Total** 71

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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<b>C. <u>Other Program Funding Summary:</u></b>	<u>FY 2002</u>	<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>
G47001 MODULAR DECON SYSTEM	4970	4925	5007	4869	4871	0	0	0	0	24642
JN0010 JOINT SERVICE FAMILY OF DECON SYSTEMS (JSFDS)	1882	1966	7374	6441	0	11696	19440	30548	Cont	Cont
JN0018 SORBENT DECON	8530	9405	262	0	0	0	0	0	0	18197

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 is subdivided into four blocks. Block I though III will provide non-personnel decontaminants, applicators and containment systems, and skin decontaminants. The requirements for these blocks will be met though the use of Commercial-Off-The-Shelf Items/Non-Development Items (COTS/NDI). Block IV will address those requirements that cannot be met with COTS/NDI or that require further definition. All blocks will use full and open competition. Procurement of CENTCOM UNS decontaminant will be made through GSA schedule to ensure availability and configuration management for the interim CENTCOM decontaminant. The Marine Corps will procure and manage the CENTCOM decontaminant inventory from which the Service requirements will be filled. The CENTCOM interim decontaminant will be phased out with the fielding of JSFDS Block I decontaminant.

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

- Block I: Sensitive Equipment/Items Decontamination
- Block II: Aircraft/Vehicle Interior Decontamination
- Block III: Aircraft/Vehicle Interior Decontamination "On-the-Move"

Concurrent Phase 0 for all three Blocks, exploring technologies applicable to one or more areas. Phase 0 for Blocks II and III will take longer to mitigate technical risk associated with less mature technologies.

Competitive award for Block I and Block II leading to Type Classification. Block III may be a Pre-Planned Product Improvement (P3I) of Block II systems.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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
JSFDS													
HW C - Block II	C/FFP	TBS	C	0	0	NONE	6620	2Q FY04	0	NONE	0	6620	0
HW C - Block I Decontaminants	C/FFP	TBS	C	0	1200	2Q FY03	0	NONE	0	NONE	0	1200	0
Subtotal I. Product Development:				0	1200		6620		0		0	7820	

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
JSFDS													
ILS C - Logistics Planning	C/CPFF	SVERDRUP, Dumfries, VA	C	0	170	1Q FY03	300	1Q FY04	147	1Q FY05	0	617	0
Subtotal II. Support Costs:				0	170		300		147		0	617	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
<b>JSFDS</b>													
OTHT C - Block I & III Test Planning	MIPR	Various	U	0	157	1Q FY03	0	NONE	0	NONE	0	157	0
OTHT C - Block II Test Planning	MIPR	Various	U	0	0	NONE	300	1Q FY04	0	NONE	2900	3200	0
DTE C - Block III Developmental Test II	C/CPFF	Battelle, Columbus, OH	C	0	877	1Q FY03	1300	1Q FY04	1600	1Q FY05	0	3777	0
DTE C - Block I Developmental Test I/II	MIPR	Various	U	0	400	2Q FY03	0	NONE	0	NONE	0	400	0
OTE C - Block I OT	MIPR	AFOTEC, Albuquerque, NM	U	0	634	2Q FY03	960	1Q FY04	0	NONE	0	1594	0
DTE C - Block I Optimization Feasibility Testing	MIPR	Various	U	0	200	2Q FY03	0	NONE	0	NONE	0	200	0
DTE C - Block II Lab Downselect Testing	MIPR	Various	U	0	0	NONE	565	1Q FY04	0	NONE	0	565	0
OTE C - Block II Operational Assessment	MIPR	AFOTEC, Albuquerque, NM	U	0	0	NONE	800	2Q FY04	0	NONE	0	800	0
DTE C - Block II Developmental Test	MIPR	Various	U	0	0	NONE	200	4Q FY04	500	1Q FY05	0	700	0
OTHT SB - Block III DT I	C/FFP	Battelle, Columbus, OH	C	0	600	1Q FY03	0	NONE	0	NONE	0	600	0
OTE C - Block II Operational Test	MIPR	AFOTEC, Albuquerque, NM	U	0	0	NONE	0	NONE	800	1Q FY05	0	800	0
OTE C - CENTCOM UNS OT Report	MIPR	AFOTEC, Albuquerque, NM	U	0	40	1Q FY03	0	NONE	0	NONE	0	40	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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
Subtotal III. Test and Evaluation:				0	2908		4125		2900		2900	12833	

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 - Joint Integrated Product Team Support	MIPR	Various	U	246	510	1Q FY03	287	1Q FY04	280	1Q FY05	0	1323	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	71	1Q FY03	0	NONE	0	NONE	0	71	0
Subtotal IV. Management Services:				246	581		287		280		0	1394	

Remarks:

TOTAL PROJECT COST:	246	4859		11332		3327		2900	22664	
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Project DE5

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

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**DE5**

**D. Schedule Profile:**

	FY 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																																
Block I Milestone II Decontaminant					2Q																											
Block I Developmental Test I (DT I)					2Q	—		4Q																								
Block I Developmental Test II (DT II)					2Q	—		1Q																								
Block I Optimization Feasibility Study					2Q	3Q																										
Block I Operational Test (OT)								4Q	1Q																							
Block I Milestone III									2Q																							
Block II Milestone B Applicators									2Q																							
Block II DT/Operational Test (OT) for Family of Applicators												4Q	—		2Q																	
Block II Milestone C (LRIP)															3Q	4Q																
Block II Follow-on Operational Test (OT)							3Q	—	—	—	—	—	—	—	—	4Q																
Block II Full Rate Production																	1Q															
Block III Developmental Test I (DT I) Skin Decon			2Q	—				1Q																								
Block III Milestone B								2Q																								
Block III DT II							3Q	—	—	—	—	—	—	—	—	1Q																
Block III Obtain FDA Approval															3Q	—				2Q												
Block III OT															3Q	4Q																

<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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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<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
JSFDS (Cont)																																
Block III Milestone C																	2Q															

Project DE5	Page 112 of 167 Pages	Exhibit R-4a (PE 0604384BP)
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2003</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 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
IP5 INDIVIDUAL PROTECTION (SDD)	15347	38075	42335	20995	5451	972	0	8665	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.
- (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.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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- (5) Development of a JSLIST Block I glove upgrade (JBIGU) and JSLIST Block II glove upgrade (JBIIGU) to meet joint aircrew and ground hand protection requirements.
- (6) Development of a JSLIST Multi-Purpose Sock (MPS).

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
AERP AIRCRAFT MODIFICATIONS	53	81	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 53 AERP Mods - Maintained configuration control on 135 series and B-2 Aircraft AERP modification design.

**Total** 53

**FY 2003 Planned Program:**

- 81 AERP Mods - Maintaining configuration control on B-2 Aircraft modification design.

**Total** 81

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT PROTECTIVE AIRCREW ENSEMBLE	3699	6444	6819	3624
RDT&E Articles (Quantity)	250	700	1100	0

**FY 2002 Accomplishments:**

- 2642 JPACE - Downselected and conducted Milestone B. Awarded two contracts with Low Rate Initial Production (LRIP) and Full Rate Production (FRP) options to develop two candidate materials based on Developmental Test (DT) IIA material swatch test results. Fabricated 125 prototype ensembles of each of the selected candidates for use in DT IIB (250 total at \$525 each). Initiated DT IIB testing on the candidates to verify system level performance requirements have been met.
- 1057 JPACE - Completed development of patterns for use in fabrication. Continued developing and updating program, logistics, and technical documentation required to support development and fielding.

**Total** 3699

**FY 2003 Planned Program:**

- 5658 JPACE - Complete DT IIB testing. Conduct Critical Design Review (CDR). Fabricate 350 prototype ensembles of each candidate for combined DT/Operational Test (OT) (700 total at \$525 each). Initiate combined DT/OT system level testing and initial Operational Assessment (OA) to verify system level performance and assess operational suitability and durability. Testing includes aircraft integration testing (crash worthiness, early flight, and aircraft compatibility) on six aircraft and system level chemical simulant testing (Man In Simulant Test).

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>IP5</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>786 JPACE - Continue developing and updating program, logistics, and technical documentation required to ensure that ensembles will be fully supported when fielded. Continue updating garments specifications and patterns.</li> </ul> <p><b>Total 6444</b></p> <p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>4130 JPACE - Complete combined DT/OT with durability and other system level testing. Initiate Independent Operational Test &amp; Evaluation (IOT&amp;E) of LRIP ensembles.</li> <li>2689 JPACE - Conduct Milestone C decision for LRIP of ensembles. Award contract options to manufacture LRIP ensembles. Fabricate 550 suits from two vendors maximum (1100 total at \$525/unit (avg)). Continue developing and updating program, logistics, and technical documentation required to ensure that ensembles will be fully supported when fielded. Initiate finalization of garment specifications and patterns.</li> </ul> <p><b>Total 6819</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2474 JPACE - Complete Independent Operational Test &amp; Evaluation (IOT&amp;E).</li> <li>750 JPACE - Finalize garment specifications and patterns. Conduct System Verification Review (SVR). Conduct Full Rate Production decision.</li> <li>400 JPACE - Finalize program, logistics, and technical documentation required to ensure that ensembles are fully supported.</li> </ul> <p><b>Total 3624</b></p>		
Project IP5/Line No: 083	Page 116 of 167 Pages	Exhibit R-2a (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS AIRCREW MASK (JSAM)	1831	11765	15200	12474
RDT&E Articles (Quantity)	0	0	500	275

**FY 2002 Accomplishments:**

- 1831 JSAM - Initiated System Development and Demonstration (SDD) source selection.

**Total** 1831

**FY 2003 Planned Program:**

- 4676 JSAM - Finalize system design and complete development. Begin logistics activities and sustainment planning to include tech order preparation, provisioning, and fielding plan.
- 884 JSAM - Complete source selection, receive Milestone B approval, and award contract. Continue program management activities, to include updating programmatic and technical documentation. Continue test planning documents such as the Test Evaluation Master Plan in preparation for Developmental Testing (DT) and Operational Testing (OT).
- 3793 JSAM - Start and complete system validation, develop production processes and hard tooling to fabricate DT and OT units.
- 2412 JSAM - Initiate material buy for DT units.

**Total** 11765

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ 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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**FY 2004 Planned Program:**

- 4645 JSAM - Complete material buy and assembly of 500 DT units at an average unit cost of \$6112 and continue all contract activities to include logistics/sustainment activities and contractor support of DT.
- 6671 JSAM - Conduct of ground DT and flight DT by Government Test and Evaluation agencies on selected aircraft.
- 2684 JSAM - Prepare program and technical documentation in preparation for Milestone C.
- 1200 JSAM - Continue documentation and planning in preparation for OT and participation of OT agencies during DT.

**Total** 15200

**FY 2005 Planned Program:**

- 4014 JSAM - Complete ground and flight DT.
- 1357 JSAM - Manufacture 275 OT units at an average unit cost of \$4935.
- 2160 JSAM - Conduct OT for rotary wing aircraft.
- 2828 JSAM - Continue preparation of program documentation to achieve MS C.
- 2115 JSAM - Continue all contract activities, to include logistics/sustainment activities and continue support of DT. Correct DT deficiencies.

**Total** 12474

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JS GENERAL PURPOSE MASK	8301	14039	15400	0
RDT&E Articles (Quantity)	5000	0	0	0

**FY 2002 Accomplishments:**

- 4500 JSGPM - Initiated System Demonstration phase. Awarded the System Demonstration contract option which delivers 5,000 prototypes at an estimated cost of \$500 each. Initiated the design and assembly of the System Support Packages for Production Qualification Testing, and Operational Testing and Evaluation.
- 836 JSGPM - Prepared program/project documentation. Documentation included: Single Acquisition Management Plan (SAMP), the Manpower and Personnel Integration (MANPRINT) Plan, ORD Update, and performance specifications.
- 386 JSGPM - Completed Low Level Operational Toxicology Studies.
- 443 JSGPM - Initiated the documentation and planning for Developmental and Operational Testing (DT/OT). Tested redesigned prototypes to assess shortcomings exposed during System Integration Phase.
- 2136 JSGPM - Initiated development of the Joint Service Chemical Environment Survivability Mask (JSCESM) as a lightweight complement to the JSGPM against limited threats.

**Total**    8301

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2003 Planned Program:**

- 699 JSGPM - Continue preparation of program/project documentation. Documentation includes Single Acquisition Management Plan (SAMP), the Manpower and Personnel Integration (MANPRINT) Plan, and Performance Specifications.
- 371 JSGPM - Continue preparation of the Logistics Support Plan. This effort includes development of manuals and finalization of supportability plans.
- 8000 JSGPM - Continue System Demonstration. System Demonstration includes system support packages for Production Qualification Testing, and Initial Operational Testing and Evaluation.
- 2859 JSGPM - Continue documentation and planning for Developmental and Operational Testing (DT/OT). Test redesigned prototypes to assess shortcomings identified during System Integration Phase.
- 2110 JSGPM - Continue development of the JSCESM as a lightweight complement to the JSGPM against limited threats.

**Total** 14039

**FY 2004 Planned Program:**

- 5752 JSGPM - Continue System Demonstration. System Demonstration includes system support packages for Production Qualification Testing and Initial Operational Testing and Evaluation.
- 935 JSGPM - Continue preparation of program/project documentation. Documentation includes the Manpower and Personnel Integration (MANPRINT) Plan, and Performance Specifications.
- 5782 JSGPM - Continue Developmental and Operational Testing. Generate test incident reports and corrective action plans to address test results during mask design and prototype production.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</b>
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<b>BUDGET ACTIVITY</b> <b>RDT&amp;E DEFENSE-WIDE/ 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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**FY 2004 Planned Program (Cont):**

- 438 JSGPM - Continue preparation of the Logistics Support Plan. This effort includes development of manuals, and finalization of supportability plans.
- 1934 JSGPM - Complete development of the JSCESM as a lightweight complement to the JSGPM against limited threats.
- 559 JSGPM - Initiate support for the development of the Improved Protective Mask (IPM).

**Total** 15400

	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>
PROTECTIVE CLOTHING (JSLIST)	1463	5190	4916	4897
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 1009 JSLIST Block II Glove Upgrade (JBIIGU) - Completed requirements analysis of JSLIST Block I glove upgrade (JBIIGU) program results for transition to JBIIGU program. Formed JBIIGU program team, conducted market survey, and completed Acquisition Strategy.
- 154 JSLIST Block II Glove Upgrade - Prepared program documentation for Interim Process Review (IPR).
- 300 JSLIST Block II Glove Upgrade - Prepared Request for Proposal (RFP) for acquisition of competitive materiel for source selection.

**Total** 1463

Project IP5/Line No: 083

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>IP5</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 300 JSLIST Block I Glove Upgrade - Complete air/ground Operational Test (OT) and complete Milestone C.</li> <li>• 474 JSLIST Block II Glove Upgrade - Award multiple competitive contracts for system development and demonstration.</li> <li>• 2453 JSLIST Block II Glove Upgrade - Conduct durability and chemical validation testing for air/ground missions.</li> <li>• 401 JSLIST Block II Glove Upgrade - Conduct project management and plan test readiness reviews.</li> <li>• 250 JSLIST Multi-Purpose Sock (MPS) - Conduct field durability trials for air/ground missions.</li> <li>• 786 JSLIST MPS - Conduct chemical validation test trials.</li> <li>• 526 JSLIST MPS - Conduct air/ground OT and prepare Milestone C documentation.</li> </ul> <p><b>Total</b> 5190</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>• 600 JSLIST MPS - Complete air/ground operational tests and complete MS C.</li> <li>• 1416 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> 4916</p>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2005 Planned Program:**

- 2897 JSLIST Block II Glove Upgrade - Complete chemical agent validation testing and complete FOT&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** 4897

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	556	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 556 SBIR

**Total** 556

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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>C. <u>Other Program Funding Summary:</u></b>	<b><u>FY 2002</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>
AF0015 AIRCREW EYE/RESPIRATORY PROT (AERP)	2786	1786	0	0	0	0	0	0	0	4572
JN0011 AERP AIRCRAFT MODS	2818	883	0	0	0	0	0	0	0	3701
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	2300	3129	0	0	0	0	0	0	0	5429
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	0	11663	8646	8216	8649	0	0	0	0	37174
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M	1727	1790	0	0	0	0	0	0	0	3517
M99501 MASK, AIRCRAFT M45	3172	994	0	0	0	0	0	0	0	4166
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A	250	1491	0	0	0	0	0	0	0	1741
MA0400 PROTECTIVE CLOTHING	126372	89680	74166	93880	92314	83016	86508	88711	Cont	Cont
MA0480 SECOND SKIN, MASK MCU-2/P	1722	12966	0	0	0	0	0	0	0	14688

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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>IP5</b>
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<b>C. <u>Other Program Funding Summary (Cont):</u></b>	<u>FY 2002</u>	<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>
N00020 CB RESPIRATORY SYSTEM - AIRCREW	3877	3085	0	0	0	0	0	0	0	6962

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>IP5</b>

**D. Acquisition Strategy:**

AERPMODS	Each aircraft in the USAF inventory that has a chemical defense requirement has been/will be modified for 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	JPACE - The acquisition strategy employs a time-phased approach, commonly referred to as "Blocking". 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 included a competitive material search for advanced material technologies addressing aviation material performance requirements from the JPACE Joint ORD. Multiple 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	Separate Cost Plus Fixed Fee PDRR contracts were awarded to Gentex and SAIC on 18 July 00. A Full & Open competition was conducted for the SDD effort. Cost Plus Award Fee System Demonstration contract with Fixed Price production options awarded to Scott Aviation on 26 Nov 02. Current quantity requirement is 76,140.

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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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JSGPM	The JSGPM completed a technical demonstration November 1995. The Concept Evaluation program began 1 October 1998. The Acquisition Strategy (AS) is a combined full scale development (System Development and Demonstration) and production with Contractor Logistics Support (CLS). The AS was approved in October 1998. The contract for development/production is based on a Joint Service performance specification with special emphasis on the lowest total ownership cost. The Developmental Test (DT) and Operational Test (OT) are scheduled to start in April 04, and a Milestone C is scheduled for May 04.
PROT CLTH	JSLIST employs a modified NDI, rapid-prototyping strategy. 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. JSLIST is an evolutionary program using technology insertion to meet Joint Service needs.

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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	Jan-03	527	Dec-03	150	Dec-04	0	2161	2161
HW S - Prototype Procurement	C/FFP	Tennessee Apparel Corporation, Tullahoma, TN	C	88	439	May-03	320	Jun-04	0	NONE	0	847	847
HW S - Prototype Procurement	C/FFP	Creative Apparel Associates, Belmont, ME	C	88	224	May-03	258	Jun-04	0	NONE	0	570	570
<b>JSAM</b>													
HW S - Contractor Development	C/CPAF	Scott Aviation, Lancaster, NY	C	0	2412	2Q FY03	2849	2Q FY04	1357	2Q FY05	0	6618	1831
<b>JSGPM</b>													
HW S - Develop JSGPM Hardware	C/CPIF	Avon, Inc. Cadillac, MI	C	7157	8000	1Q FY03	5752	1Q FY04	0	NONE	0	20909	0
HW S - Develop JSCESM	C/FFP	TBS	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>				<b>8324</b>	<b>14021</b>		<b>10906</b>		<b>1507</b>		<b>0</b>	<b>34758</b>	

Remarks: JSGPM - System Demonstration includes 5,000 prototypes at \$500 each.

AERP Mods - FY03 continues aircraft modification effort.

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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 & Validation	WR	NAWCAD, Patuxent River, MD	U	704	101	Jan-03	344	Dec-03	100	Dec-04	0	1249	1249
ILS S - Systems Logistics	WR	NAWCAD, Patuxent River, MD	U	302	55	Jan-03	355	Dec-03	300	Dec-04	0	1012	1012
<b>JSAM</b>													
ES S - JSAM - Design Engineering	C/CPAF	Scott Aviation	C	0	3793	2Q FY03	0	NONE	0	NONE	0	3793	0
TD/D SB - System Engineering, Integrated Logistic Support, Technical Manual Prep	C/CPAF	Scott Aviation	C	0	3462	2Q FY03	1796	2Q FY04	2115	2Q FY05	0	7373	0
<b>JSGPM</b>													
ES S - Engineering Support	MIPR	PM NBCDS, APG, MD	U	400	468	1Q FY03	438	1Q FY04	0	NONE	0	1306	2852
TD/D S - Tech Data and Documentation of JSGPM System	MIPR	PM NBCDS, APG, MD	U	250	206	1Q FY03	125	1Q FY04	0	NONE	0	581	1000
ILS S - Logistics Support of JSGPM System	MIPR	PM NBCDS, APG, MD	U	336	190	1Q FY03	200	1Q FY04	0	NONE	0	726	1700
ES S - Systems Engineering for JCESM	MIPR	PM NBCDS, APG, MD - 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	NONE	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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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>		
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	WR	NAWCAD, Patuxent River, MD	U	610	687	Jan-03	0	NONE	0	NONE	0	1297	1297
DTE S - Physical Property/Fit Testing	WR	NCTRF, Natick, MA	U	309	297	Jan-03	344	Dec-03	0	NONE	0	950	950
DTE C - Chemical Agent Testing	C/CPFF	Battelle, Columbus, OH	N	367	598	Jan-03	0	NONE	0	NONE	0	965	965
DTE S - Chemical Testing	MIPR	USA DTC, Dugway, UT	U	1377	139	Jan-03	738	Dec-03	0	NONE	0	2254	2254
DTE S - Don/Doff Testing	WR	LANL, Los Alamos, NM	U	420	55	Mar-03	0	NONE	0	NONE	0	475	475
DTE S - Fit Testing	SS/FFP	Anthrotech, Yellow Springs, OH	C	106	73	3Q FY03	148	Dec-03	0	NONE	0	327	327
DTE S - Human Factors Testing	MIPR	SBCCOM, Natick, MA	U	226	359	Jan-03	0	NONE	0	NONE	0	585	585
DTE S - Durability	MIPR	USA ATEC, Aberdeen, MD	U	0	828	Jan-03	644	Dec-03	0	NONE	0	1472	1472
OTE S - Initial Operational Test & Evaluation	MIPR	AFOTEC DET 1, Albuquerque, NM	U	150	350	Jan-03	1512	Dec-03	900	Dec-04	0	2912	2912
OTE S - Initial Operational Test & Evaluation	MIPR	USA ATEC, Aberdeen, MD	U	40	10	Jan-03	208	Dec-03	924	Dec-04	0	1182	1182
OTE S - Initial Operational Test & Evaluation	WR	COMOPTEVFOR, Norfolk, VA		0	70	Jan-03	536	Dec-03	650	Dec-04	0	1256	1256
<b>JSAM</b>													
OTHT SB - Govt Developmental Test Activities	MIPR	NAVAIR, Patuxent River, MD	U	0	700	Jan-03	6671	Jan-04	4014	Jan-05	0	11385	0
OTE S - Govt Operational Test Activities	PO	AFOTEC, Alamogordo, NM	U	0	514	Jan-03	1200	Jan-04	2160	Jan-05	0	3874	0

Project IP5

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>JSGPM</b>													
DTE S - Plan and Conduct of Developmental Testing of JSGPM System	MIPR	ATEC, Falls Church VA; DTC; HRED, APG, MD	U	788	400	1Q FY03	2785	1Q FY04	0	NONE	0	3973	1250
OTE S - Plan and Conduct Operational Testing of JSGPM System	MIPR	Various	U	538	906	1Q FY03	1938	1Q FY04	0	NONE	0	3382	8050
OTE C - PQT for IPM variant	MIPR	PM NBCDS, APG, MD		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	2093	3Q FY03	2416	1Q FY04	2897	1Q FY05	0	8091	0
DTE S - JSLIST MPS Durability Trials	MIPR	Various	U	0	196	2Q FY03	200	2Q FY04	1700	1Q FY05	0	2096	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
Subtotal III. Test and Evaluation:				5616	9355		21314		13245		0	49530	

Remarks: JSAM - Responsible test organization is the Naval Air Warfare Center in Patuxent River, MD. Operational test organization is AFOTEC.

JPACE - Responsible test organization is the Naval Air Warfare Center in Patuxent River, MD. Operational test organization is AFOTEC DET 1.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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	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	689	Jan-03	493	Dec-03	300	Dec-04	0	2322	2322
PM/MS SB - Air Force Program Coordination	MIPR	311 HSW Brooks AFB, TX	U	763	242	Jan-03	98	Dec-03	100	Dec-04	0	1203	1203
PM/MS SB - Management Support	C/CPFF	Battelle, Columbus, OH	N	726	154	Jan-03	98	Dec-03	0	NONE	0	978	978
PM/MS SB - US Army Program Coordination	MIPR	PMSOLDIER, Ft. Belvoir, VA	U	0	272	Jan-03	98	Dec-03	100	Dec-04	0	470	470
PM/MS SB - US Marine Corps Program Coordination	WR	MARCORSYSCOM, Quantico, VA	U	0	146	Jan-03	98	Dec-03	100	Dec-04	0	344	344
<b>JSAM</b>													
PM/MS C - Program Management/Management Support	MIPR	Various	U	0	884	1Q FY03	2684	1Q FY04	2828	1Q FY05	0	6396	0
<b>JSGPM</b>													
PM/MS S - Program Management by Army (Lead Service)	MIPR	PM NBCDS, APG, MD	U	574	556	1Q FY03	1113	1Q FY04	0	NONE	0	2243	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	0	NONE	0	1600	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
<b>PROT CLTH</b>													
PM/MS C - Integrated Product Team Support	MIPR	Various	U	1060	961	1Q FY03	700	1Q FY04	300	1Q FY05	0	3021	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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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
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	556	1Q FY03	0	NONE	0	NONE	0	556	0
Subtotal IV. Management Services:				5663	5060		5982		3728		0	20433	

Remarks:

TOTAL PROJECT COST:	24611	38075		42335		20995		0	126016
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**Exhibit R-4a, Schedule Profile**

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IP5**

<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
AERPMODS																																
B-2 Configuration Maintenance of Design	1Q	—————						4Q																								
JPACE																																
Pattern Development	>>	— 3Q																														
Milestone B	2Q																															
Award System Test Quantity	2Q																															
Fabricate Prototypes for Developmental Test - DT IIB & Combined DT/Operational Test (OT)			3Q	—	3Q																											
Developmental Testing - DT IIB				4Q	1Q																											
Pattern Finalization				1Q	—————						1Q																					
Developmental Testing - Combined DT/OT Operational Assessment							3Q	—	2Q																							
Developmental Test - Durability Testing									1Q	—————			4Q																			
Milestone C - Low Rate Initial Production (LRIP)									2Q																							
Independent Operational Testing									2Q	—————			2Q																			
Award Low Rate Initial Production (LRIP) Delivery Order Contract Option									3Q																							



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

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IP5**

<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)																																
Prepare and Execute Log Spt Plan			3Q		<del>—————</del>				1Q																							
Preparation of MS C Documentation			3Q		<del>—————</del>				1Q																							
MS C TC In Process Review (IPR)												2Q																				
OT with Prod Representative Articles															1Q																	
Produce Test Items for IPM											2Q	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 Prototype Build							3Q	1Q																								
JSLIST Block II Glove Conduct Developmental Test (DT)/Operational Test (OT)											1Q	2Q																				
JSLIST Block II Glove Milestone C Low Rate Initial Production (LRIP)												4Q																				

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**IP5**

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
PROT CLTH (Cont)																																
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								4Q																								
JSLIST MPS - Production Contract Award									1Q																							
JSLIST - IOT&E Alternative Footwear Solutions													1Q	---		3Q																
JSLIST- MS C Alternative Footwear Solutions																																

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
MB5 MEDICAL BIOLOGICAL DEFENSE (SDD)	45032	43621	5880	3087	3653	14961	58971	71758	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, Smallpox, Tularemia, Staphylococcal Enterotoxins, and Equine Encephalitis vaccines.

The Critical Reagent Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/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. This project 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 beginning in FY04.

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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 sources and preventive medicine samples. Technologies will be selected based on their reliability, technological maturity, and supportability. In addition to mobile and fixed site facilities, the JBAIDS will be used on ground vehicles, aircraft (fixed and rotary wing), and ships.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CRITICAL REAGENTS PROGRAM	0	0	3126	3087
RDT&E Articles (Quantity)	0	0	0	0

**FY 2004 Planned Program:**

- 800 CRP - Continue transition of International Task Force (ITF)-6B targets.
- 1626 CRP - Continue transition of Nucleic Acid Assays, validation of assays and Nucleic Acid Panels.
- 700 CRP - Develop and validate next generation Hand Held Assay (HHA) technology.

**Total** 3126

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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 2005 Planned Program:**

- 833 CRP - Continue transition of ITF-6B targets.
- 1482 CRP - Continue transition of Nucleic Acid Assays and validation and scale-up of Nucleic Acid Panels.
- 772 CRP - Continue validation and scale-up of next generation HHA technologies.

**Total 3087**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT BIOLOGICAL AGENT IDENT AND DIAG SYSTEM	10222	9889	2754	0
RDT&E Articles (Quantity)	0	0	25	0

**FY 2002 Accomplishments:**

- 8202 JBAIDS - Conducted full and open competition to select winning JBAIDS contractor; four-phased down selection process used. Fourteen contractors initially evaluated, seven asked to participate in "Fly-Off"/laboratory test of performance capabilities (identification of Biological Warfare (BW) agents).
- 1220 JBAIDS - Conducted laboratory tests at Dugway Proving Grounds, UT. Two contractors passed the test and will receive JBAIDS Requests for Proposals (RFPs). Objective was to ensure "Low Risk", short development program in FY03, and rapid fielding in FY04.
- 800 JBAIDS - Completed DoD acquisition documentation requirements.

**Total 10222**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2003 Planned Program:**

- 1888 JBAIDS - Select winning JBAIDS contractor from the remaining two candidate "Fly-Off" tested designs.
- 4778 JBAIDS - Purchase 25 development prototype JBAIDS systems and 128,000 test assay kits (unit cost of \$10) to support development and operational testing requirements.
- 1387 JBAIDS - Conduct Development Testing (DT) at the contractor's facility and government laboratories. Conduct JBAIDS hardware reliability and environmental testing.
- 512 JBAIDS - Submit JBAIDS agent (Anthrax - two targets) 510k package for FDA review and clearance. The two targets for Anthrax refer to two different assays to two different target identification sites. Each target site assay will be submitted to the FDA for review and clearance as it is required for use as a medical diagnostic tool.
- 1324 JBAIDS - Review contractor developed JBAIDS technical manuals, review training packages, complete system drawing requirements to support a physical configuration audit of the design.

**Total** 9889

**FY 2004 Planned Program:**

- 1804 JBAIDS - Complete DT and Operational Test (OT) programs.
- 950 JBAIDS - Submit additional nine JBAIDS BW agents identification test assays (510k packages) to the FDA for review and clearance (required to use JBAIDS as a medical diagnostic device).

**Total** 2754

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SMALLPOX VACCINE	27035	33101	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 19150 JVAP - Smallpox Vaccine - Continued process optimization and lot manufacture validation. Conducted stability testing for Smallpox vaccine. Completed three parts of a 5-cohort Phase 1 clinical trial.
- 7885 JVAP - Smallpox Vaccine - Developed manufacturing capability for Vaccinia Immune Globulin (VIG). Initialized accelerated manufacture and release of VIG.

**Total** 27035

**FY 2003 Planned Program:**

- 501 JVAP - Smallpox Vaccine - Submit Investigational New Drug (IND) annual reports and manufacturing amendments to the FDA for Smallpox vaccine and VIG.
- 20864 JVAP - Smallpox Vaccine - Continue Smallpox and VIG stability studies. Complete 4th and 5th stages of a Phase 1 clinical trial (safety and immunogenicity).
- 11736 JVAP - Smallpox Vaccine - Complete process optimization and lot manufacture validation. Produce three consistency lots, achieving first-year baseline stockpile quantities (4 million doses).

**Total** 33101

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
BIOLOGICAL VACCINES	7775	0	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2002 Accomplishments:**

- 3997 JVAP - Prime Systems Contract activities - Conducted systems integration, Earned Value Management System (EVMS), Integrated Digital Environment (IDE) initiatives, special studies, regulatory compliance, and quality assurance for all vaccine efforts.
- 3778 JVAP - Pentavalent Botulinum Toxoid - Completed serologies and data analysis of the Pentavalent Botulinum Toxoid booster study and prepared final report for submission to the FDA.

**Total**    7775

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	631	0	0
RDT&E Articles (Quantity)	0	0	0	0

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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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**FY 2003 Planned Program:**

- 631 SBIR

**Total 631**

<b>C. <u>Other Program Funding Summary:</u></b>											
	<u>FY 2002</u>	<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>	
JX005 DOD BIOLOGICAL VACCINE PROCUREMENT	82779	42886	63097	60938	56756	57350	60676	59343	Cont	Cont	

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>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, and the Joint Biological Point Detection System (JBPDS) Block I and II. This program also supports the development and manufacture of individual Handheld Immunochromatographic Assays (HHA) and the DoD Biological Sampling Kit. This results in improved identification performance and ensures comparable results across disparate systems. The program is designed along a stepwise strategy. BA4 funding develops new targets and target production protocols and develops multiple antibody candidates. Those candidate antibodies are then transitioned into multiple end item assay formats (e.g. HHAs) and their performance is validated. This transition, validation and production scale-up occurs under BA5 funding. After successful end item scale-up, those 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, and JBPDS Block I requirements. Some performance improvements in those reagents will be pursued. However, the bulk of the FY04-09 development activity will focus on antibody and HHA development against 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 1QFY03. 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 are being actively supported as of FY02.

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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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JBAIDS	JBAIDS is an evolutionary development program. Block I development effort will focus on militarizing and hardening of critical identification technologies selected from a competitive market survey. This will be a rapid development and fielding effort to deliver a critical capability to identify bacteria, viral agents, and biological toxins to the field in the shortest time. FDA clearance for the initial set of gene probes and primers and hardware will be coordinated and obtained. Block II 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.
VAC BOT	Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports advanced development of a rBotulinum Multivalent (AB) vaccine, a requirement in the Joint Chiefs of Staff threat list.
VAC PLG	Using a prime systems contract as the single integrator for the advanced development, testing, licensure, production, and storage, a contract was awarded in Nov 97 for three vaccines with options to produce another 15 vaccines. Successful FDA licensure of biological defense vaccines will be achieved by the 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. The current budget supports development of a Plague vaccine, a requirement in the Joint Chiefs of Staff threat list.

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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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VAC SPX                      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. Three recent events necessitate modification 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. A down selection among the DoD and DHHS smallpox vaccine candidates has been scheduled following completion of the Phase 1 clinical trials. Following the down selection decision, a new Acquisition Program Baseline (APB) for the smallpox vaccine program will be developed and submitted.

VACCINES                      Approximately 18 new BD vaccine candidates are being developed against validated BW threat agents through Biological Defense Medical Research Programs (S&T). To ensure the availability of these vaccines for protection of U.S. forces, a prime systems contract was awarded in Nov 97 for a single integrator to manage the advanced development, production, storage, and testing of these products. Successful FDA licensure of BD vaccines can best be achieved using the prime contractor who will function as the "responsible head" and license holder to perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The anthrax vaccine procurement is sole-sourced to the only FDA-licensed supplier, BioPort Corporation.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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 Targets	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	175	1Q FY04	247	1Q FY05	0	422	0
HW C - Transition of ITF-6B Targets	MIPR	USAMRIID, Fort Detrick, MD	U	0	0	NONE	175	1Q FY04	247	1Q FY05	0	422	0
HW C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	375	1Q FY04	363	1Q FY05	0	738	0
HW C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	ECBC, APG, MD	U	0	0	NONE	385	1Q FY04	373	1Q FY05	0	758	0
HW C - Development & Validation of Next Generation HHA Technology	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	175	1Q FY04	168	1Q FY05	0	343	0
JBAIDS													
SW SB - Design and Fabricate Identification Assays & System Hardware	PO	TBS		2000	4778	3Q FY03	0	NONE	0	NONE	0	6778	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	10854	1Q FY03	0	NONE	0	NONE	0	10854	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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:				2000	15632		1285		1398		0	20315	

Remarks: Biological Vaccines - Cost to Complete: "Continuing"  
Prior to FY03, funding was not provided by individual vaccine.

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 - Transition of ITF-6B Targets	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	17	1Q FY04	21	1Q FY05	0	38	0
TD/D SB - Transition of ITF-6B Targets	MIPR	USAMRIID, Fort Detrick, MD	U	0	0	NONE	17	1Q FY04	18	1Q FY05	0	35	0
TD/D SB - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	17	1Q FY04	18	1Q FY05	0	35	0
TD/D SB - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	ECBC, APG, MD	U	0	0	NONE	23	1Q FY04	24	1Q FY05	0	47	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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 SB - Development & Validation of Next Generation HHA Technology	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	17	1Q FY04	18	1Q FY05	0	35	0
<b>JBAIDS</b>													
TD/D SB - Update/Develop TDPs, Performance Specs, Drawings, and Reports	Various	TBS		300	496	3Q FY03	0	NONE	0	NONE	0	796	0
TD/D SB - Logistics Support Analysis Development/Technical Drawing Package	Various	TBS		350	828	3Q FY03	0	NONE	0	NONE	0	1178	0
TD/D SB - FDA Submission and Regulatory Approval of Assays/Hardware	PO	TBS		754	512	4Q FY03	0	NONE	0	NONE	0	1266	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>				1404	2337		91		99		0	3931	

Remarks: Biological Vaccines - Cost to Complete: "Continuing"

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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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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													
DTE C - Transition of ITF-6B Targets	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	180	1Q FY04	120	1Q FY05	0	300	0
DTE C - Transition of ITF-6B Targets	MIPR	USAMRIID, Fort Detrick, MD	U	0	0	NONE	190	1Q FY04	130	1Q FY05	0	320	0
DTE C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	190	1Q FY04	145	1Q FY05	0	335	0
DTE C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	ECBC, APG, MD	U	0	0	NONE	190	1Q FY04	150	1Q FY05	0	340	0
DTE C - Development & Validation of Next Generation HHA Technology	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	485	1Q FY04	115	1Q FY05	0	600	0
OTE C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	190	1Q FY04	215	1Q FY05	0	405	0
OTE C - Transition of Nucleic Acid Assays, Validation of Assays & Nucleic Acid Panels	MIPR	ECBC, APG, MD	U	0	0	NONE	190	1Q FY04	221	1Q FY05	0	411	0
OTE C - Development & Validation of Next Generation HHA Technology	MIPR	Naval Medical Research Center, Silver Spring, MD	U	0	0	NONE	0	NONE	350	1Q FY05	0	350	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2003</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>MB5</b>		
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	0	NONE	12	2Q FY04	13	2Q FY05	0	25	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	35	2Q FY04	37	2Q FY05	0	72	0
PM/MS S - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	0	NONE	44	1Q FY04	47	1Q FY05	0	91	0
PM/MS S - Program Executive Office	Allot	PEO, Falls Church, VA	U	0	0	NONE	44	1Q FY04	47	1Q FY05	0	91	0
JBAIDS													
PM/MS SB - Program Management Support (Source Selection)	MIPR	PEO, Falls Church, VA	U	150	1462	1Q FY03	950	1Q FY04	0	NONE	0	2562	0
PM/MS S - Program Management Support	C/CPFF	SAIC, Frederick, MD	C	0	38	2Q FY03	11	2Q FY04	0	NONE	0	49	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	109	2Q FY03	30	2Q FY04	0	NONE	0	139	0
PM/MS SB - Chem Bio Medical Systems Office	Allot	CBMS, Frederick, MD	U	0	139	1Q FY03	39	1Q FY04	0	NONE	0	178	0
PM/MS S - Program Executive Office	Allot	PEO, Falls Church, VA		0	140	1Q FY03	39	1Q FY04	0	NONE	0	179	0
VAC SPX													
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	CBMS, Fort Detrick, MD	U	0	464	1Q 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	PEO, Falls Church, VA	U	0	469	1Q 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	631	1Q FY03	0	NONE	0	NONE	0	631	0
Subtotal IV. Management Services:				150	4968		1204		144		0	6466	

Remarks: Biological Vaccines - Cost to Complete: "Continuing"

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>		DATE <b>February 2003</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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TOTAL PROJECT COST:	3554	43621		5880		3087		0	56142
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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																																
ITF-6A List Complete	>>			4Q																												
ITF-6B List Complete		2Q														4Q																
DNA Panels for 10 Threat Agents				4Q												4Q																
DNA Efforts to ITF-6A and ITF-6B				4Q																												
ITF 6C List Complete																1Q																4Q
JBAIDS																																
Block I Advanced Concept Technology Demonstration (ACTD)				3Q 4Q																												
Block I Request for Proposal (RFP) Release								1Q 2Q																								
Milestone B								2Q																								
Procure Systems for Engineering Design Test (EDT)/Developmental Test (DT)								3Q				1Q																				
Engineering Design Test (EDT)/Developmental Testing (DT)												1Q 2Q																				
Milestone C (LRIP)												3Q																				
Initial Operational Test and Evaluation (IOT&E)												3Q																				

## Exhibit R-4a, Schedule Profile

DATE **February 2003**

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

PE NUMBER AND TITLE  
**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (SDD)** PROJECT  
**MB5**

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
VAC SPX																																
Milestone C	1Q																															
Consistency Lot Production	>>	2Q																														
Phase 2b Clinical Trial			3Q						1Q																							
Baseline Stockpile Quantities Obtained							4Q																									
Biological Licensure Application (BLA) Submission													3Q																			
FDA Licensure/Full Rate Production IN Process Review (IPR)																	3Q															
VACCINES																																
Botulinum Toxoid Booster Study	>>			4Q																												

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2003</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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COST (In Thousands)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Complete							
MC5 MEDICAL CHEMICAL DEFENSE (SDD)	1426	1926	1462	1419	7183	7214	7559	6261	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 funds development of Pyridostigmine Bromide (PB) 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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
MEDICAL CHEMICAL DEFENSE	1426	1899	1462	1419
RDT&E Articles (Quantity)	0	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 2002 Accomplishments:**

- 191 Antidote Treatment, Nerve Agent, Autoinjector (ATNAA) - Conducted a full rate production in-process review with a requirement that the manufacturer provide three-year shelf life stability data to the FDA.
- 96 Pyridostigmine Bromide - Continued storage and stability testing of the Pyridostigmine Bromide used in human clinical trials.
- 138 Pyridostigmine Bromide - Continued three studies to validate surrogate markers for human efficacy (human ex vivo muscle study, human ex vivo blood study, and higher animal species ex vivo study).
- 852 SERPACWA - Continued FDA manufacturing requirements, redesigned packaging, continued production line process validation, shelf-life monitoring, and FDA required Phase 4 testing.
- 149 Pyridostigmine Bromide - Completed a study to validate surrogate markers in small animal ex vivo muscle for human efficacy.

**Total** 1426

**FY 2003 Planned Program:**

- 608 Pyridostigmine Bromide - Initiate New Drug Application (NDA) preparation for submission to the FDA.
- 589 Pyridostigmine Bromide - Conduct ex vivo human muscle study to demonstrate efficacy vs. surrogate markers.
- 114 Pyridostigmine Bromide - Provide the FDA with a plan for redesign of human ex vivo muscle study protocol to obtain FDA concurrence.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 2003 Planned Program (Cont):**

- 228 Pyridostigmine Bromide - Complete validation of markers of efficacy in higher animal studies and receive the FDA compliant report.
- 360 SERPACWA - Complete FDA manufacturing requirements and shelf-life monitoring.

**Total** 1899

**FY 2004 Planned Program:**

- 970 Pyridostigmine Bromide - Complete human ex vivo muscle study to demonstrate efficacy vs. surrogate marker.
- 492 Pyridostigmine Bromide - Finalize and submit NDA to the FDA.

**Total** 1462

**FY 2005 Planned Program:**

- 1224 Pyridostigmine Bromide - Initiate efforts to relabel/repackage licensed product for fielding.
- 145 Pyridostigmine Bromide - Review and answer FDA inquiries regarding NDA obtaining additional data as required.
- 50 Pyridostigmine Bromide - Obtain FDA approval of NDA.

**Total** 1419

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	27	0	0
RDT&E Articles (Quantity)	0	0	0	0

**FY 2003 Planned Program:**

- 27 SBIR

**Total** 27

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:**

MEDCHEM      These Advanced Component Development and Prototypes and the System Development and Demonstration 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. The current acquisition strategy of in-house development and the use of prime contractors will be continued.

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>MEDCHEM</b>													
SW SB - Pyridostigmine Bromide Relabel/Repackage Licensed Product	C/FFP	ICN Pharmaceutical, Costa Mesa, CA	C	0	0	NONE	0	NONE	936	1Q FY05	0	936	0
SW SB - SERPACWA Manufacturing & Shelf-Life Monitoring	C/FFP	McKesson Bioservices, Rockville, MD	C	0	310	1Q FY03	0	NONE	0	NONE	0	310	0
<b>Subtotal I. Product Development:</b>													
				0	310		0		936		0	1246	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

**UNCLASSIFIED**

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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>MEDCHEM</b>													
TD/D SB - Pyridostigmine Bromide NDA Preparation & Submission	Allot	Chem Bio Medical Systems, Frederick, MD	U	0	45	1Q FY03	46	1Q FY04	93	1Q FY05	0	184	0
TD/D SB - Pyridostigmine Bromide FDA Redesign Protocol	Allot	Chem Bio Medical Systems, Frederick, MD	U	0	95	1Q FY03	0	NONE	0	NONE	0	95	0
TD/D S - Pyridostigmine Bromide NDA Preparation & Submission	C/FFP	EER Systems, Inc., Frederick, MD	C	0	475	1Q FY03	423	1Q FY04	94	1Q FY05	0	992	0
TD/D S - Pryidostigmine Bromide FDA Compliant Documentation	MIPR	USA Medical Research Institute of Chemical Defense, APG, MD	U	0	45	1Q FY03	0	NONE	0	NONE	0	45	0
TD/D S - Pyridostigmine Bromide Documentation to Relabel/Repackage Licensed Product	Allot	Chem Bio Medical Systems, Frederick, MD	U	0	0	NONE	0	NONE	230	1Q FY05	0	230	0
<b>Subtotal II. Support Costs:</b>				<b>0</b>	<b>660</b>		<b>469</b>		<b>417</b>		<b>0</b>	<b>1546</b>	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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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	7	2Q FY03	6	2Q FY04	6	2Q FY05	0	19	0
PM/MS S - Program Management Support	C/CPFF	Camber Corporation, Frederick, MD	C	0	21	2Q FY03	16	2Q FY04	17	2Q FY05	0	54	0
PM/MS SB - Chem Bio Medical Medical Systems Office	Allot	CBMS, Fort Detrick, MD	U	0	27	1Q FY03	21	1Q FY04	21	1Q FY05	0	69	0
PM/MS S - Program Executive Office	Allot	PEO, Falls Church, VA	U	0	27	1Q FY03	21	1Q FY04	22	1Q FY05	0	70	0
<b>ZSBIR</b>													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ, AMC Alexandria, VA	U	0	27	1Q FY03	0	NONE	0	NONE	0	27	0
<b>Subtotal IV. Management Services:</b>													
				0	109		64		66		0	239	

Remarks: No prior year costs are exhibited as the Medical Chemical Defense Program transferred to Chemical Medical Biological Systems at the start of FY 2003.

<b>TOTAL PROJECT COST:</b>		0	1926		1462		1419		0	4807	
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Project MC5	Page 166 of 167 Pages	Exhibit R-3 (PE 0604384BP)
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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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<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																																
PB - Conduct Studies to Support New Drug Application (NDA)	1Q	—————											3Q																			
PB - Approval of New Drug Application (NDA)													2Q																			
SERPACWA - Complete FDA Requirements			3Q		3Q																											
ATNAA - Full Rate Production Decision				4Q																												

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**BUDGET ACTIVITY 6**  
**RDT&E MGT SUPPORT**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2003</b>
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**BUDGET ACTIVITY**  
**RDT&E DEFENSE-WIDE/**  
**BA6 - RDT&E Mgt Support**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Budget Activity (BA) Cost	43391	35889	39345	42652	47462	45107	40167	37774	Continuing	Continuing
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	34091	35889	39345	42652	47462	45107	40167	37774	Continuing	Continuing
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	9300	0	0	0	0	0	0	0	0	9300

**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 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.

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

DATE **February 2003**

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 has transitioned from the from the Joint Service Integration Group (JSIG) to the Joint Requirements Office (JRO); Joint RDA planning, input to the Annual Report to Congress and Program Objective Memorandum (POM) development by the Joint Service Materiel Group (JSMG), which will transition to 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 (formerly the Joint NBC Defense Board (JNBCDB) Secretariat).

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

DATE **February 2003**

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 Point Test 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 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 2003**

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 2003**

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 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 Joint Service Materiel Group (JSMG), which will transition to the Program Analysis and Integration Office (PA&IO); review of joint plans and the consolidated CB defense POM Strategy by the Army in its Executive Agent role (formerly the Joint NBC Defense Board (JNBCDB) Secretariat).

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 Point Test program (O49) funds provide 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 2003</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 2002</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 2003 PB)	31052	42959	36530	34495
Current Biennial Budget Estimates (FY 2004/2005)	34091	35889	39345	42652
Total Adjustments	3039	-7070	2815	8157
a. Congressional General Reductions	-271	-7070	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	6006	0	0	0
d. SBIR/STTR Transfer	-8774	0	0	0
e. Other Adjustments	0	0	2815	8157

**Change Summary Explanation:**

**Funding:** FY03 - Transfer to the Department of Homeland Security Bioterrorism initiatives (-\$6,000K).

FY05 - Increase to management support to fund Joint Test Infrastructure Working Group (+\$7,532K).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
AT6 ANTI-TERRORISM (RDT&E MGT SUPPORT)	446	448	456	476	499	508	512	522	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 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 out years, as appropriate. Sponsors of projects funded under this budget item would include DTRA, J-34, ASD (SO/LIC), SBCCOM, USA CMLS, the Technical Support Working Group, and other organizations involved with combating CB terrorism.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
ANTI-TERRORISM	446	442	456	476

**FY 2002 Accomplishments:**

- 446 Performed planning and assessments for Joint Service Installation Pilot Project (JSIPP).

**Total** 446

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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 Planned Program:**

- 442 Perform program management support for Joint Service Installation Pilot Project.

**Total 442**

**FY 2004 Planned Program:**

- 456 Develop after action reports on Joint Service Installation Pilot Project (JSIPP). Refine fixed site facility biological detection concept of operations (CONOPS) to reduce life cycle costs.

**Total 456**

**FY 2005 Planned Program:**

- 476 Perform analytical support for the Joint Service Installation Protection Program (JSIPP) and perform analysis of standardized test requirements for first responder and civilian protection equipment.

**Total 476**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	6	0	0

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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 Planned Program:**

- 6 SBIR

**Total** 6

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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) CM6</b>
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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CM6 WMD - CIVIL SUPPORT TEAM (RDT&E MGT SUPPORT)	0	1555	1574	1568	1559	1555	0	0	0	7811

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

**Project CM6 WMD - CIVIL SUPPORT TEAM (RDT&E MGT SUPPORT):** This funding provides resources to successfully execute the Consequence Management RDA program. WMD-CSTs and U.S. Army Reserve Reconnaissance and Decontamination assets would receive the systems developed and procured under this program in accordance with the Joint Service Agreement for Chemical and Biological Defense Program Management.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
WMD - CIVIL SUPPORT TEAMS	0	1533	1574	1568

**FY 2003 Planned Program:**

- 433 WMD CST- Initiate support planning and oversight efforts for the Inter Agency Board (IAB) to coordinate equipment and operational issues for WMD-CSTs.
- 1100 WMD CST - Initiate support planning and operations for 32 WMD-CSTs operations and additional state and national emergency teams.

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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) CM6</b>
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**FY 2003 Planned Program (Cont):**

**Total** 1533

**FY 2004 Planned Program:**

- 474 WMD CST- Continue support planning and oversight efforts for IAB to coordinate equipment and operational issues for WMD-CSTs.
- 1100 WMD CST - Continue support planning and operations for WMD-CST.

**Total** 1574

**FY 2005 Planned Program:**

- 468 WMD CST- Continue support planning and oversight efforts for IAB to coordinate equipment and operational issues for WMD-CSTs.
- 1100 WMD CST - Continue support planning and operations for WMD-CSTs.

**Total** 1568

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	22	0	0

**FY 2003 Planned Program:**

- 22 SBIR

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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) CM6</b>
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<b>FY 2003 Planned Program (Cont):</b> <b>Total        22</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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
DT6 JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	3195	5921	5939	3424	5916	6019	4428	4511	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 Joint Service Integration Group (JSIG), which has transitioned to the Joint Requirements Office (JRO), Doctrine and Training (DT), and Modeling & Simulation (M&S). This effort funds (1) development/revision of medical and non-medical Multi-Service, Joint Doctrine and Tactics, Techniques, and Procedures (TTP); (2) development of joint medical, non-medical and M&S requirements; (3) the U.S. Army Chemical School (USACMLS) Joint Senior Leaders' Course (JSLC); (4) assistance in correcting training and doctrine deficiencies covered in General Accounting Office (GAO) reports; (5) support of current and planned NBC Defense studies, analysis, models and simulations, training, exercises, and war games; determine overlaps, duplication, and shortfalls; and build and execute programs to correct shortfalls in all aspects of NBC Defense.

**B. Accomplishments/Planned Program**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Joint Requirements Office Doctrine and Training	0	5835	5939	3424

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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 Planned Program:**

- 2177 DT - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine. Continue to support the integration of CB defense considerations during the revision and development of selected joint doctrinal materials. Continue support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continue support to the Combatant Commanders with NBC/WMD exercise assistance and training. Coordinate drafting/review of Joint ORDs.
- 2308 DT - Continue analyses to support the definition phase of the requirements generation process, joint operational concepts, architecture development, and supporting technical annexes.
- 75 DT - Continue to support additional joint participation in the Joint Senior Leaders' Course (JSLC).
- 1275 DT - Continue support of services Battle Management requirements. Continue to define the requirements for simulation based virtual CBD environment for training, mission planning/rehearsal, force development, and acquisition programs. Validate modeling and simulation requirements and tools for C4I systems.

**Total** 5835

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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 2004 Planned Program:**

- 2277 DT - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine: (1) NBC Aspects of Consequence Management; (2) NBC Defense of Theater Fixed Sites, Ports, and Airfields. Continue to support the integration of CB defense considerations during the revision and development of selected joint doctrinal materials. Continue support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continue support to the Combatant Commanders with NBC/WMD exercise assistance and training. Coordinate drafting/review of Joint ORDs.
- 2350 DT - Continue analyses to support the definition phase of the requirements generation process, joint operational concepts, architecture development, and supporting technical annexes.
- 100 DT - Continue to support additional joint participation in the Joint Senior Leaders' Course (JSLC).
- 1212 DT - Continue support of services Battle Management requirements. Continue to define the requirements for simulation based virtual CBD environment to training, mission planning/rehearsal, force development, and acquisition programs. Validate modeling and simulation requirements and tools for C4I systems.

**Total** 5939

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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 2005 Planned Program:**

- 2104 DT - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine: (1) NBC Contamination Avoidance; (2) NBC Operations. Continue to support the integration of Chemical Biological Defense (CBD) considerations during the revision and development of selected joint doctrinal materials. Continue support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continue support to the Combatant Commanders with NBC/ exercise assistance and training. Coordinate drafting/review of Joint Operational Requirements Documents (ORDs).
- 100 DT - Continue to support additional joint participation in the Joint Senior Leaders' Course (JSLC).
- 1220 DT - Continue support of Services Battle Management requirements. Continue to define the requirements for simulation based virtual CBD environment for training, mission planning/rehearsal, force development, and force development, and acquisition programs. Validate modeling and simulation requirements and tools for C4I systems.

**Total** 3424

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JSIG DOCTRINE AND TRAINING	3195	0	0	0

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</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>	
<p><b>FY 2002 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1645 DT - Continued to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine: (1) NBC Vulnerability Analysis; (2) Potential Military CB Agents and Compounds; (3) Health Service Support in an NBC Environment. Continued to support the integration of CB defense considerations during the revision and development of selected joint doctrinal materials. Continued support to the integration and enhancement of NBC/WMD materials in joint and Service professional education. Continued support to the Combatant Commanders with NBC/WMD exercise assistance and training. Coordinated the drafting/review of the following Joint Operational Requirements Documents (ORDs): (1) Joint Chemical &amp; Biological Agent Water Monitor Milestone (MS) B; (2) Joint Chemical Environment Survivability Mask MS B; (3) Joint Container Refill System MS B; (4) Artemis MS B (Draft); (5) Joint Effects Model MS B (Draft); (6) Joint Operational Effects Federation MS B (Draft); (7) Virtual Prototyping Simulation MS B (Draft); (8) Training Simulation Capability MS B (Draft). Completed assessment of plague and anthrax stockpile. Initiated assessment of Tularemia stockpile requirements.</li> <li>• 475 DT - Continued analyses to support the definition phase of the requirements generation process: (1) Completed integrated NBC Contamination Avoidance Mission Area Analysis (MAA); (2) Initiated integrated NBC Contamination Avoidance Mission Needs Analysis (MNA); (3) Initiated Protection (Collective/Individual) MAA/MNA; (4) Initiated NBC Battle Management MAA/MNA (5) Initiated NBC Decontamination MAA/MNA.</li> <li>• 75 DT - Continued to support additional joint participation in the Joint Senior Leaders' Course (JSLC).</li> <li>• 1000 DT - Supported services identification and coordination of Battle Management requirements through continued support of the Modeling and Simulations Requirements Panel (MSRP). Continued to validate requirements through support of joint experiments and exercise/war game participation.</li> </ul>		
Project DT6/Line No: 111	Page 18 of 45 Pages	Exhibit R-2a (PE 0605384BP)

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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 DT6                  MGT SUPPORT)</b>
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**FY 2002 Accomplishments (Cont):**

**Total**    3195

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	86	0	0

**FY 2003 Planned Program:**

- 86 SBIR

**Total**        86

**UNCLASSIFIED**

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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 DW6          MGT SUPPORT)</b>
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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
DW6 DUGWAY PROVING GROUND (RDT&E MGT SUPPORT)	14923	15201	16356	16615	18009	18255	18864	19138	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 Chemical and Biological (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.

Dugway Proving Ground (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.

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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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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. Test cost increases 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 T&E workforce and expertise is also put at risk.

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&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.

Projects programmed for testing at DPG include: Joint Service Lightweight Standoff 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 Standoff Detection Systems, Joint Service General Purpose Mask (JSGPM), Artemis chemical standoff detector, Joint Protective Aircrew Ensemble (JPACE), and Joint Biological Standoff Detection System (JBSDS).

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DUGWAY PROVING GROUND	14923	14981	16356	16615

**FY 2002 Accomplishments:**

- 8418 DPG - Funded 40 percent of the civilian labor costs for Program Budget Guidance (PBG) authorizations. The balance was reimbursed from test customer funds. These civilian personnel support DPG's CB test mission to include 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.
- 1215 DPG - Funded 4 percent of the targeted 20 percent contract labor costs. The balance was 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.
- 515 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.

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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 2002 Accomplishments (Cont):**

- 4775 DPG - Provided for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts included synthetic scene generator, chemical agent protective materials swatch methodology development, detector test system modernization, aerosol generator for decon testing, and purchased to upgrade/replace aging equipment and instrumentation.

**Total** 14923

**FY 2003 Planned Program:**

- 8541 DPG - Funding supports 40 percent of the civilian labor costs for 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, Contracting Officer Representative (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.
- 950 DPG - Funding supports 3 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 - 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 2003 Planned Program (Cont):**

- 4950 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts include 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** 14981

**FY 2004 Planned Program:**

- 10062 DPG - Funding supports 40 percent of the civilian labor costs for 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, Contraction Officer Representative (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 2 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.

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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 2004 Planned Program (Cont):**

- 4927 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. Efforts include decon pad replacement chemical and biological simulant characterization, chemical and biological laboratory equipment modernization, and purchases to upgrade/replace aging equipment and instrumentation.

**Total** 16356

**FY 2005 Planned Program:**

- 10393 DPG - Funding supports 40 percent of the civilian labor costs for 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, Contracting Officer Representative (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 2 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 (PCR) analysis improvements, and purchases to upgrade/replace aging equipment and instrumentation.

**Total** 16615

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	220	0	0

**FY 2003 Planned Program:**

- 220 SBIR

**Total** 220

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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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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
MS6 RDT&E MGT SUPPORT	12617	9859	12080	17644	18560	15861	12989	10137	Continuing	Continuing

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

**Project MS6 RDT&E MGT SUPPORT:** This project provides management support for the DoD CB defense program. It includes program oversight and integration of overall medical and non-medical programs by the Assistant to the Secretary of Defense for Nuclear, Chemical and Biological (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 integration of joint requirements, training and doctrine by the Joint Requirements Office (JRO); Joint Research Development Acquisition (RDA) planning, input to the CB Defense Annual Report to Congress, and Program Objectives Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); and review of joint plans and the consolidated CB Defense POM Strategy by Army in its Executive Agent role (formerly the Joint NBC Defense Board (JNBCDB) Secretariat).

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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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The project includes programming support for the Joint Service CB Information System (JSCBIS) which serves as a budgetary and informational database for the DoD CB Defense Program. Funding is provided for the CB Archive Information Management System (CBAIMS) a means to collect, assemble, catalog and archive CB defense information from multiple service locations into a central repository and library.

Funding is also provided for the Joint Test Infrastructure Working Group (JTIWG), 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 Department of Defense (DoD) CB defense systems, as outlined in the RDA Plan. JTIWG program will fund a series of methodology, instrumentation, and associated validation programs 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 Draft FY02 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.

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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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
CHEM BIO ARCHIVE INFORMATION MGT SYS	730	333	244	242

**FY 2002 Accomplishments:**

- 730 CBAIMS - Archived Chemical and Biological information from multiple service locations.

**Total** 730

**FY 2003 Planned Program:**

- 333 CBAIMS - Archive Chemical and Biological information from multiple service locations.

**Total** 333

**FY 2004 Planned Program:**

- 244 CBAIMS - Archive Chemical and Biological information from multiple service locations.

**Total** 244

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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:**

- 242 CBAIMS - Archive Chemical and Biological information from multiple service locations

**Total** 242

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT NBC DEFENSE BOARD MGT	186	185	190	191

**FY 2002 Accomplishments:**

- 186 JNBCDB MGT - Provided Joint Nuclear, Biological and Chemical Defense Board (JNBCDB) oversight and analysis for the PPBS process.

**Total** 186

**FY 2003 Planned Program:**

- 185 JNBCDB MGT - Provide oversight and analysis for the PPBS process.

**Total** 185

**FY 2004 Planned Program:**

- 190 JNBCDB MGT - Provide oversight and analysis for the PPBS process.

**Total** 190

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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:**

- 191 JNBCDB MGT - Provide oversight and analysis for the PPBS process.

**Total** 191

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT SERVICE INTEGRATION GROUP MGMT	2562	2558	2616	2637

**FY 2002 Accomplishments:**

- 2562 JSIG MGT - Coordinated the development and milestone reviews of joint CBRN requirements. Conducted annual reviews and updates of the Joint NBC Defense Modernization Plan, the integrated medical and non-medical JPL, the NBC Defense Joint Future Operational Capabilities, and the CB Defense Annual Report to Congress.

**Total** 2562

**FY 2003 Planned Program:**

- 2558 JRO MGT - Plan, coordinate and oversee the development and review of the: Joint CBRN operational requirements generation; DoD CBDP POM Strategy; Joint CBRN Modernization Plan; Integrated medical and non-medical CBRN Joint Priority List; CBRN Joint Future Operational Capabilities, and the CB Defense Annual Report to Congress.

**Total** 2558

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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:**

- 2616 JRO MGT - Plan, coordinate and oversee the development and review of the: Joint CBRN operational requirements generation; DoD CBDP POM Strategy; Joint CBRN Modernization Plan; Integrated medical and non-medical CBRN Joint Priority List; CBRN Joint Future Operational Capabilities, and the CB Defense Annual Report to Congress.

**Total** 2616

**FY 2005 Planned Program:**

- 2637 JRO MGT - Plan, coordinate and oversee the development and review of the: Joint CBRN operational requirements generation; DoD CBDP POM Strategy; Joint CBRN Modernization Plan; integrated medical and non-medical CBRN Joint Priority List; CBRN Joint Future Operational Capabilities, and the CB Defense Annual Report to Congress.

**Total** 2637

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT SERVICE MATERIEL GROUP MGMT	3455	4446	4792	4878

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Accomplishments:**

- 3455 JSMG MGT - Developed assessments to support RDA Planning. Provided analytic programmatic support for development of POM Strategy, the Budget Estimate Submit (BES), and the President's Budget (PB) submissions. Responded to specialized evaluation studies throughout the PPBS process. Provided JSCBIS database management.

**Total** 3455

**FY 2003 Planned Program:**

- 4446 JSMG MGT- Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the BES, and the PB submissions. Respond to specialized evaluation studies throughout the PPBS process. Provide management of JSCBIS.

**Total** 4446

**FY 2004 Planned Program:**

- 4792 JSMG MGT- Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the BES, and the PB submissions. Respond to specialized evaluation studies throughout the PPBS process. Provide JSCBIS database management.

**Total** 4792

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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:**

- 4878 JSMG MGT- Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the BES, and the PB submissions. Respond to specialized evaluation studies throughout the PPBS process. Provide JSCBIS database management.

**Total** 4878

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT TEST INFRASTRUCTURE WORKING GROUP	0	0	1967	7378

**FY 2004 Planned Program:**

- 1967 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** 1967

**FY 2005 Planned Program:**

- 7378 JTIWG - Continue methodology development, test system instrumentation integration, and test technology validation for refereeing agent simulant challenges for field testing (developmental and operational). Refine methodology for data fusion and visualization. Procure additional ground truth instrumentation and initiate mobile capability.

**Total** 7378

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
OFFICE SECRETARY OF DEFENSE MGMT	5684	2195	2271	2318

**FY 2002 Accomplishments:**

- 5684 OSD MGT - Performed program reviews/assessments, provided programmatic PPBS 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** 5684

**FY 2003 Planned Program:**

- 2195 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS 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** 2195

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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:**

- 2271 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS 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** 2271

**FY 2005 Planned Program:**

- 2318 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS 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** 2318

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	142	0	0

**FY 2003 Planned Program:**

- 142 SBIR

**Total** 142

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
O49 JOINT POINT TEST (RDT&E MGT SUPPORT)	2910	2905	2940	2925	2919	2909	3374	3466	Continuing	Continuing

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

**Project O49 JOINT POINT TEST (RDT&E MGT SUPPORT):** The objectives of the Joint Point Test (JPT) program are to plan, conduct, evaluate, and report on joint tests (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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
JOINT & COMBATANT COMMANDER OPERATIONAL TESTING	2910	2863	2940	2925

**FY 2002 Accomplishments:**

- 1436 JPT - Conducted assessments evaluating performance and procedures in a chemical environment. Conducted assessment on casualty decontamination procedures.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2002 Accomplishments (Cont):**

- 1474 JPT - Conducted field trials evaluating performance and procedures in a chemical environment. Conducted casualty decontamination procedures, contamination control and toxic free area operations, and cargo aircraft contamination control in field trials.

**Total** 2910

**FY 2003 Planned Program:**

- 1409 JPT - Conduct field trials evaluating performance and procedures in a chemical environment. Field trials to be conducted are in support of operations: (1) determination of chemical droplet size, and (2) processing cargo and troops through an exchange zone.
- 463 JPT - Conduct laboratory tests evaluating performance and procedures in a chemical environment. Conduct laboratory tests to address the effects of rotor wash on aircrew ensemble.
- 721 JPT - Conduct assessments evaluating performance and procedures in a chemical environment. Conduct assessments of the effectiveness of interior building areas for use as chemical rest and relief areas.
- 150 JPT - Conduct CB Joint Technical Information Center Research. Conduct the following as necessary: Initial Evaluation, Literature Search, or a letter response with the results of the evaluation. Conduct as necessary, further assessment to determine if modeling, a field test, a laboratory test, and/or a chamber test is merited.
- 120 JPT - Continue to conduct Technical Data Source Book Update. Continue incremental update of data and information generated from on going Project O49 activity.

**Total** 2863

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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**FY 2004 Planned Program:**

- 903 JPT - Conduct assessments, laboratory and field tests evaluating performance and procedures in a chemical and biological environment in support of information requirements submitted by Combatant Commanders and Service representatives.
- 840 JPT - Conduct field tests evaluating performance and procedures in a chemical environment, to wit, the effectiveness of the C-17 cargo aircraft in-flight checklist procedure for eliminating smoke and fumes.
- 634 JPT - Conduct field tests to determine the level of incursion and condensation of chemical warfare agent vapors into tunnels and other underground structures.
- 538 JPT - Conduct laboratory and field tests evaluating use of cargo covers made from various materials for equipment protection in a chemical or biological environment.
- 25 JPT - Continue to conduct Technical Data Source Book updates by reviewing the literature and updating volumes of the source books with newly published material.

**Total** 2940

**FY 2005 Planned Program:**

- 2800 JPT - Conduct assessments, laboratory and field tests evaluating performance and procedures in a chemical and biological environment in support of information requirements submitted by Combatant Commanders and Service representatives.
- 125 JPT - Continue to conduct Technical Data Source Book updates by reviewing the literature and updating volumes of the source books with newly published material.

**Total** 2925

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	0	42	0	0

**FY 2003 Planned Program:**

- 42 SBIR

**Total** 42

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	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	9300	0	0	0	0	0	0	0	0	9300
SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	9300	0	0	0	0	0	0	0	0	9300

**A. Mission Description and Budget Item Justification:** The overall objective of the Chemical/Biological Defense (CBD) SBIR program is to improve the transition or transfer of innovative CBD technologies between Department of Defense (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 2003</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>
--	--

<b>B. <u>Program Change Summary:</u></b>	<b><u>FY 2002</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 2003 PB)	0	0	0	0
Current Biennial Budget Estimates (FY 2004/2005)	9300	0	0	0
Total Adjustments	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	0	0	0	0
e. Other Adjustments	0	0	0	0

**Change Summary Explanation:**

**Funding:**

**Schedule:**

**Technical:**

**UNCLASSIFIED**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>							DATE <b>February 2003</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 (SBIR) SB6</b>
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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	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)	9300	0	0	0	0	0	0	0	0	9300

**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 2003</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>

STTR was established as a companion program to the SBIR Program and is executed in essentially the same manner; however there are several distinct differences. The STTR Program provides a mechanism for participation by university , federally-funded research and development centers (FFRDCs), and other non-profit research institutions. Specifically, the STTR Program is designed to provide an incentive for small companies and research at academic institutions and non-profit research and development institutions to work together to move emerging technical ideas from the laboratory to the marketplace to foster high-tech economic development and to advance U.S. economic competitiveness. Each STTR proposal must be submitted by a team which includes a small business (as the prime contractor for contracting purposes) and at least one research institution, which have entered into a Cooperative Research and Development Agreement for the purposes of the STTR effort. Furthermore, the project must be divided up such that the small business performs at least 40% of the work and the research institution(s) performs at least 30% of the work. The remainder of the work may be performed by either party or a third party. The budget is separate from the SBIR budget and is significantly smaller (0.15% of the extramural R&D budget vs. 2.5% for the SBIR Program).

The Department of Defense (DoD) has consolidated management and oversight of the Chemical and Biological Defense (CBD) program into a single office within the Office of the Secretary of Defense (OSD). The Army was designated as the Executive Agent for coordination and integration of the CBD program. The executive agent for the SBIR/STTR portion of the program is the Army Research Office-Washington.

The overall objective of the CBD SBIR/STTR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
SBIR/STTR	9300	0	0	0

**FY 2002 Accomplishments:**

- 9300 Conducted Chemical and Biological Defense SBIR research and development efforts.

**Total** 9300

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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 2003</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 2002 Actual	FY 2003 Estimate	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	3442	3428	1949	0	0	0	0	8819
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	3442	3428	1949	0	0	0	0	8819

**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.

Line No: 000

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2003</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 2002</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 2003 PB)	0	0	0	0
Current Biennial Budget Estimates (FY 2004/2005)	0	0	3442	3428
Total Adjustments	0	0	3442	3428
a. Congressional General Reductions	0	0	0	0
b. Congressional Increases	0	0	0	0
c. Reprogrammings	0	0	0	0
d. SBIR/STTR Transfer	0	0	0	0
e. Other Adjustments	0	0	3442	3428

**Change Summary Explanation:**

**Funding:** FY04 - Initiate funding 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 (+\$3,500K).

FY05 - Continued funding to support the upgrade of fielded detectors against emerging chemical threat agents and toxic industrial chemicals (+\$3,500K).

**Schedule:**

**Technical:**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>	DATE <b>February 2003</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 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
CA7 CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	0	0	3442	3428	1949	0	0	0	0	8819

**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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
DETECTOR MODS	0	0	3442	3428

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)</b>		DATE <b>February 2003</b>
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>
<p><b>FY 2004 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3442 DETECTMOD - Initiate evaluations of existing and fielded NBC detectors to detect emerging and changing threats.</li> </ul> <p><b>Total 3442</b></p> <p><b>FY 2005 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3428 DETECTMOD - Continue evaluations of existing and fielded NBC detectors to detect emerging and changing threats.</li> </ul> <p><b>Total 3428</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>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 Soldier Biological Chemical Command (SBCCOM) and Project Manager for Nuclear Biological and Chemical Defense (PMNBCDS).</p>		
Project CA7/Line No: 000	Page 4 of 7 Pages	Exhibit R-2a (PE 0607384BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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													
PM NBCDS & SBCCOM, APG, MD.	PO	Evaluate existing NBC detectors.	U	0	0	NONE	3442	1Q FY04	3428	1Q FY05	0	6870	0
Subtotal I. Product Development:				0	0		3442		3428		0	6870	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

IV. Management Services: Not applicable

Project CA7

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>	DATE <b>February 2003</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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TOTAL PROJECT COST:	0	0	3442		3428		0	6870
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<b>Exhibit R-4a, Schedule Profile</b>	DATE <b>February 2003</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 eval of fielded detectors									1Q	—————			4Q																			