CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2005**

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

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

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	148276	181972	164481	149428	149530	152027	155919	149176	Continuing	Continuing
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	88011	92075	60787	76897	70670	73260	66155	54853	Continuing	Continuing
CM3	HOMELAND DEFENSE (ATD)	1738	3380	0	0	0	0	0	0	0	5118
CP3	COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	44353	68272	63124	37131	31339	32232	41281	41147	Continuing	Continuing
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	10097	13129	24363	19222	32238	31302	32460	34454	Continuing	Continuing
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	0	2200	4500	4156	4500	6865	Continuing	Continuing
TT3	TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	Continuing	Continuing

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

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

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DATE: **February 2005**

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

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

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

Change Summary Explanation:

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

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

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

Funding (cont.)

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

Schedule: N/A

Technical: N/A

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

DATE: **February 2005**

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

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

PROJECT: **CB3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CB3	CHEMICAL BIOLOGICAL DEFENSE (ATD)	88011	92075	60787	76897	70670	73260	66155	54853	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB3 CHEMICAL BIOLOGICAL DEFENSE (ATD): This project demonstrates technology advancements for joint service application in the areas of chemical and biological agent detection and identification, decontamination, modeling and simulation, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. This project funds science and technology to advance technology development.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Technology Readiness Assessment	0	2297	0	0

FY 2005 Planned Program:

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

Total 2297

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DATE: **February 2005**

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

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

PROJECT: **CB3**

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

FY 2005 Planned Program:

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

Total 9290

FY 2006 Planned Program:

- 4986 Technology Transition - Initiate competitive assessment of all mature technologies from areas outside of the Chemical Biological Defense Program for rapid technology insertion into the capability areas of detection, decontamination, modeling and simulation, and protection that support Joint Service Programs of Record.

Total 4986

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DATE: **February 2005**

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

FY 2007 Planned Program:

- 5140 Technology Transition - Continue competitive assessment of all mature technologies from areas outside of the Chemical Biological Defense Program for rapid technology insertion into the capability areas of detection, decontamination, detection, and protection that support Joint Service Programs of Record.

Total 5140

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

FY 2004 Accomplishments:

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

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DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

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

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DATE: **February 2005**

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

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

PROJECT: **CB3**

FY 2004 Accomplishments (Cont):

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

Total 73164

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

FY 2004 Accomplishments:

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

Total 900

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

FY 2005 Planned Program:

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

Total 1931

FY 2006 Planned Program:

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

Total 2030

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

FY 2007 Planned Program:

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

Total 4864

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

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

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

FY 2004 Accomplishments:

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

Total 9611

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

FY 2005 Planned Program:

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

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

FY 2005 Planned Program (Cont):

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

Total 22324

FY 2006 Planned Program:

- 4500 Point Detection, Biological Identification BCA# 21 - Complete and demonstrate transition into micro-array system for high throughput laboratory biological detection/identification. Demonstrate the prototype for an antibody multiplex assays system for Joint Biological Point Detection System (JBPDS) technology insertion.
- 5500 Lightweight Integrated CB Detection (DTO CB50) BCA# 3/4/21/31 - Assess ability of technology to meet Joint Modular Chemical Biological Detection System (JMCBDS) requirements and as technology insertion for Joint Biological Point Detection System and Reconnaissance Systems as enhancements/replacement for the biological trigger systems. The technology will also meet the need to detect/identify chemical aerosols. Initiate fabrication of brassboards.

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

FY 2006 Planned Program (Cont):

- 3600 Chemical/Biological Agent Water Monitor (DTO CB37) BCA# 31 - Complete the development of the chemical detection portion of the requirements. Demonstrate and conduct a Milestone A at the end of FY06 on the chemical requirements. Complete, demonstrate, and conduct a Milestone B for the advanced prototype for the biological detection requirements by the end of FY06. The DTO supports the Joint Chemical Biological Agent Water Monitor (JCBAWM).
- 1426 System Performance Modeling BCA# 1/28 - Complete the database development of infrared spectral backgrounds. Conduct and finalize an analytical feasibility study to determine the minimal performance parameters needed for a standoff biological detection system for on-the-move capability for a mobile platform like Stryker vehicle program.
- 4000 Detection Test Capabilities for Non-Traditional Agents BCA# 33 - Continue the development of agent to simulant correlations in support of T&E needs. Initiate the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agents. Priority will be for biological materials followed by chemical materials.
- 1000 Biological Stand-off Technology BCA# 1 - Initiate the development of test methodology to evaluate and assess the value of new signatures in board regions of the electromagnetic spectrum. Initiate development of a prototype system.
- 1360 Chemical Stand-off Technology BCA# 7/10 - Initiate the development of test methodology to evaluate and assess the value of new signatures to reduce the false alarm rate and to increase the detection range.

Total 21386

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

FY 2007 Planned Program:

- 5600 Lightweight Integrated CB Detection (DTO CB50) BCA#3/4/21/31 - Demonstrate the technology and transition for technology insertion into Joint Biological Point Detection System (JBPDS) and Reconnaissance Systems as enhancements/replacement for the biological trigger systems to detect/identify chemical aerosols. Complete fabrication, and test and evaluation of brassboards.
- 7222 Lightweight Imaging System for Reconnaissance BCA#7/10/28 - Initiate the development of a prototype system based on the enabling technology demonstration from DTO CB52. Continue the development of a prototype system that meets the requirements from the analytical feasibility system conducted in FY06 for an on-the-move capability for biological standoff on a mobile reconnaissance platform.
- 4000 Detection Test Capabilities for Non-Traditional Agents BCA#33 - Continue the development of agent to simulant correlations in support of T&E needs. Continue the studies necessary to fill the identified gaps from the analytical studies on the impact of threat environments on the properties of neat agents. Priority will be for biological materials followed by chemical materials.
- 2000 Chemical Stand-off Technology BCA#7/10 - Continue the development of test methodology to evaluate and assess the value of new signatures to reduce the false alarm rate and to increase the detection range.
- 2000 Biological Stand-off Technology BCA#1 - Continue the development of test methodology to evaluate and assess the value of new signatures in broad regions of the electromagnetic spectrum.

Total 20822

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DATE: February 2005

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

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

PROJECT: CB3

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

FY 2004 Accomplishments:

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

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

FY 2004 Accomplishments (Cont):

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

Total 4000

FY 2005 Planned Program:

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

Total 1353

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FY 2006 Planned Program:

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

Total 7252

FY 2007 Planned Program:

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

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

PROJECT: **CB3**

FY 2007 Planned Program (Cont):

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

Total 10324

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

FY 2004 Accomplishments:

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

Total 336

FY 2005 Planned Program:

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

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

FY 2005 Planned Program (Cont):

Total 1907

FY 2006 Planned Program:

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

Total 8729

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

DATE: **February 2005**

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

FY 2007 Planned Program:

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

Total 8950

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

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

DATE: **February 2005**

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

FY 2006 Planned Program:

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

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

DATE: **February 2005**

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

FY 2006 Planned Program (Cont):

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

Total 16404

FY 2007 Planned Program:

- 1700 Joint Expeditionary Collective Protection (JECP) - Modeling and Simulation - Construct prototype model, leverage legacy models, commence validation, verify model via test data, prepare validation reports, acquire accreditation.
- 4350 JECP - Advanced Technologies Tests - Continue construction of test fixtures and commence testing of fixtures for RLI, filtration-systems, materials, seams and enclosures fixtures.
- 5947 JECP - Advanced Technologies Tests - Validate RLI, filtration and materials, seams and enclosures fixtures.
- 2900 JECP - Simulant Platform Tests - Develop testing and evaluation methods and procedures for non-vapor threats, e.g., aerosols, rains, and other emerging threats.
- 1900 Decontamination System Battlefield Test Conditions, Evaluation and Methodology - Procure instrumentation for field decontamination assessment and measurements. Commence testing to validate performance of current methods under battlefield conditions.
- 4000 Individual Protective Equipment (IPE) Bio Mask System Chamber Test - Complete modifications for prototype chamber for use with biological materials, toxic industrial materials (TIMs) and non traditional agents (NTAs).

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

DATE: **February 2005**

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

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

PROJECT: **CB3**

FY 2007 Planned Program (Cont):

- 2000 IPE Battlefield Test Conditions, Evaluation Methodology - Conduct full-range testing to quantify current performance baselines, initiate development of a field mask testing system, initiate development of field IPE-system test procedures.
- 2000 IPE Overarching Model - Complete model development, commence verification, validation and accreditation as per DoD requirements.
- 2000 IPE Expanded Simulant System Test - Develop real-time Man In Suit Test (MIST) sampler, develop aerosol-challenge test capabilities for MIST chamber.

Total 26797

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

FY 2005 Planned Program:

- 1984 Bioterrorism Preparedness - Develop a training program to support hospitals in the event of a bioterrorism event.
- 2579 Detecting Contaminants in Drinking Water - Analyze, test and develop prototype CBRN and TIC/TIM sample concentration and detection technologies for use in-line with existing water purification units, and conduct research to determine water purification units performance in the removal of high threat CBRN agents and Toxic Industrial Chemicals (TICs).
- 992 Dual Use Detection Technology for Sick Building Syndrome - Develop sensors for internal monitoring of buildings for the detection of hazardous materials in the event of terrorism and sick building syndrome.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 3372 Handheld Biosensor and Continuous Monitor for Biodetection - Develop optically based sensors for the use as handheld systems for the detection of biological materials.
- 992 National Testbed for Rescue Robotics - Develop test facilities for evaluating and assessing the performance of small robotics devices in surveillance and hazardous environments.
- 2579 Water Quality Sensors - Develop a prototype hand-held, self-powered instrumentation system to analyze effluent water samples for presence of biological and chemical warfare agents or contaminants.
- 992 Adaptation Gaseous and Liquid Technology Decontamination - Evaluate the suitability and use of proven gaseous and liquid decontamination technologies for use in human decontamination.
- 1984 Advanced Engineered Enzyme Decontamination System - Develop enzyme decontamination systems for a broad range of chemical biological warfare agents. Screen and evaluate existing enzymes and bio-engineering enzyme to provide improved decontaminants.
- 8430 Countermeasures to Chemical and Biological Defense/Rapid Response - Develop new models and sensor systems for both medical and environmental application against chemical and biological hazardous materials.
- 2975 E-Smart Threat Agent Network - Demonstrate a network of biological trigger systems to determine the value of data fusion to reduce false alarms and to increase the value of the information that each sensor can provide.
- 1984 Handheld Biological Agent Detection (HBAD) - Develop an optically based sensors for the use as handheld systems for the detection of biological materials.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 992 Hi-Int Pulsed Radiation for Chemical and Biological Agent Defeat - Install linear accelerator used to determine effective kill doses of radiation required to kill biological agent simulants or destroy chemical agent simulants.
- 2281 Immunochemical Biological/Chemical Threat Agent Detector - Develop a multiplex, micro-array system based on both antibodies and nucleic acid type assays.
- 1686 Industry-Based Research to Miniaturize Chemical and Biological Detectors (Continuation only) - Develop new production methods for solid state components used in the sensor systems.
- 4166 Laser Interrogation of Surface Agents (LISA) Inspector - Develop a handheld Raman spectroscopy base system for the detection of contaminants on surfaces, primary focus is for detecting contamination on equipment or internal compartments.
- 1190 Polymer-Based Bio Mems - Develop sensor elements based on polymer films to act as molecular recognition moieties and serve as a potential replacement for antibodies.
- 992 Protection Against Toxic Industrial Chemical - Continue development and validation of TIC list. Evaluate the protection provided by current protective materials against identified TIC threats.
- 1736 Rapid Response Bio-Chem Decontamination, Liquid and Dry (Decon Green) - Optimize proven liquid and dry process decontamination technologies, packaging and deliverly systems for rapid deployment in biological and chemical incidents.
- 992 Rapid Response Database Systems Center - Develop a Research Demonstration Center and a Portable Training and Demonstration Center that will present first responders and their managers with real-time status reports of data collected from hospitals, schools, doctors, pharmacies and veterinary offices that could support a response to a bio-terrorist attack or other hazard.

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

DATE: **February 2005**

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

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

PROJECT: **CB3**

FY 2005 Planned Program (Cont):

- 992 Rapid Response Sensor Networking for Multiple Applications - Refine the sensor and network design leading to a demonstration of the integrated network for detection and early warning.
- 5554 Reactive Air Purification for Individual and Collective Protection (RAPICP) - Complete the advanced media selection and the design of pre-industrialized test articles (full canisters) to be tested for performance and consistency. Initiate a controlled production run of two hundred (200) units in order to perform FY06 field evaluation and obtain feedback from military personnel. Continue the development of the 2'x2' advanced Triosyn COLPRO anti-microbial pre-filter as well as develop a new advanced, LPD integrated, stand alone HEPA-like/antimicrobial filter for COLPRO applications. Develop an advanced Triosynated membrane and improved pre-filter/filter design.
- 2777 Removal of NBC Agents in Drinking Water - Analyze, test and develop prototype CBRN and Toxic Industrial Chemicals (TICs) removal technologies for use in-line with existing water purification units, and conduct research to determine water purification units performance in the removal of high threat CBRN agents and TICs.

Total 52221

	FY 2004	FY 2005	FY 2006	FY 2007
SBIR/STTR	0	752	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CB3**

FY 2005 Planned Program:

- 752 SBIR

Total 752

C. Other Program Funding Summary:

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

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

DATE: **February 2005**

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

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

PROJECT: **CM3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CM3	HOMELAND DEFENSE (ATD)	1738	3380	0	0	0	0	0	0	0	5118

A. Mission Description and Budget Item Justification:

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

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

DATE: **February 2005**

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

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

PROJECT: **CM3**

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

B. Accomplishments/Planned Program

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

FY 2004 Accomplishments:

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

Total 1738

FY 2005 Planned Program:

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

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

DATE: **February 2005**

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

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

PROJECT: **CM3**

FY 2005 Planned Program (Cont):

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

Total 2360

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

FY 2005 Planned Program:

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

Total 992

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

FY 2005 Planned Program:

- 28 SBIR

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

DATE: **February 2005**

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

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

PROJECT: **CM3**

FY 2005 Planned Program (Cont):
Total 28

C. Other Program Funding Summary:

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

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

DATE: **February 2005**

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

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

PROJECT: **CP3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
CP3	COUNTERPROLIFERATION SUPPORT (ATD)	4077	5116	0	0	0	0	0	0	0	9193

A. Mission Description and Budget Item Justification:

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

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
ACTD Planning and Development	4077	5074	0	0

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

DATE: **February 2005**

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

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

PROJECT: **CP3**

FY 2004 Accomplishments:

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

Total 4077

FY 2005 Planned Program:

- 3574 ACTD-PD - Initiate technology maturity evaluations for selection of technologies for future ACTD candidates.
- 1500 ACTD-PD - Initiate the Military Applications in Reconnaissance and Surveillance (MARS) -Unmanned Ground Vehicle (UGV) program testing CBRN detection technologies for use on one man and two man portable UGVs for technology insertion into the CBRN Unmanned Ground Reconnaissance (CUGR) ACTD or the transition program for CUGR ACTDs UGV portion.

Total 5074

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

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

DATE: **February 2005**

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

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

PROJECT: **CP3**

FY 2005 Planned Program:

- 42 SBIR

Total 42

C. Other Program Funding Summary:

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

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TB3	MEDICAL BIOLOGICAL DEFENSE (ATD)	44353	68272	63124	37131	31339	32232	41281	41147	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB3 MEDICAL BIOLOGICAL DEFENSE (ATD): This project funds preclinical development of safe and effective prophylaxes and therapies (vaccines and drugs) for pre- and post-exposures to biological threat agents. This project also supports the advanced technology development of diagnostic devices to rapidly diagnose exposure to biological agents in clinical samples. A broad range of technologies involved in the targeting and delivery of prophylactic and therapeutic medical countermeasures and diagnostic systems is evaluated so that the most effective countermeasures are identified for development. Entry of candidate vaccines, therapeutics, and diagnostic technologies into development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) and licensure processes and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs); science and technology program areas in medical biological defense capability areas (Pretreatments, Diagnostics, Therapeutics and Emerging Threats), directed research efforts; and efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA). Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes), Gap #22 (Medical Therapeutics - Limited anti-viral/ toxin development), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

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

DATE: February 2005

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

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

PROJECT: TB3

B. Accomplishments/Planned Program

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

FY 2004 Accomplishments:

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

Total 16700

FY 2005 Planned Program:

- 9652 Defense Advanced Research Projects Agency (DARPA) Program Transition - Conclude characterization and process development of candidate vaccines, therapeutics, and diagnostic technologies to determine if any are sufficiently mature to transition to development. Complete development of five additional B-cell lines. Complete development and performance testing of a 16-channel B-cell based diagnostic sensor. Establish formulation for an orally bioavailable superantigen toxin antagonist.

Total 9652

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DATE: February 2005

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

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

PROJECT: TB3

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

FY 2004 Accomplishments:

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

Total 4463

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

DATE: **February 2005**

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

FY 2005 Planned Program:

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

Total 13611

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

DATE: **February 2005**

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

FY 2006 Planned Program:

- 3274 Diagnostic Technologies - Continue to provide multiplexed nucleic and immunoassays capable of distinguishing endemic pathogens from threat agents in clinical samples. Transition to advanced developer as testing is completed. Initiate a detailed analysis of alternatives for an advanced integrated diagnostic system capable of detecting and identifying a broad range of biological threat agents in clinical specimens. Continue to augment field studies of assays, reagents and platforms for the diagnosis of potential biological warfare threat agents with animal studies prior to transition to the advanced developer. Invest in improving the sensitivity and specificity of existing assays, developing assays for new targets and new threats, as genomic data and techniques become available. Develop gene sets correlating host immune response with exposure to endemic pathogens/threat agents. Identify appropriate recombinant DNA technologies. Apply new technological approaches for processing clinical samples to complex matrices and different organisms. Continue to apply proteomics finding to the development of immunologic assays for pathogen detection. Continue to develop, evaluate, and transition diagnostic assays out of the technology base in support of the JBAIDS incremental acquisition. Continue advanced development on next generation technologies. Expand technology assessments of systems compatible with future comprehensive integrated hand held diagnostic system. Invest in bioinformatics necessary to tie the integrated system together. Test toxin assays in a field or multicenter setting, as applicable.
- 1700 Diagnostic Technologies, Methodology to Facilitate Development of Biological Warfare Threat Agent Detection and Medical Diagnostic Systems (DTO CB56) - Deliver four new nucleic acid detection/diagnostic assays and/or supporting reagents to the advanced developer. Deliver four new antigen detection assays and/or supporting reagents to the advanced developer.

Total 4974

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

DATE: **February 2005**

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

FY 2007 Planned Program:

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

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2007 Planned Program (Cont):

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

Total 6204

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

FY 2006 Planned Program:

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

Total 1726

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2007 Planned Program:

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

Total 7466

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

FY 2004 Accomplishments:

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

Total 3874

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

DATE: February 2005

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

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

PROJECT: TB3

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

FY 2004 Accomplishments:

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

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2004 Accomplishments (Cont):

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

Total 9865

FY 2005 Planned Program:

- 1890 Vaccine Research Support, Alternate Delivery Methods for Recombinant Protein Vaccines (DTO CB32) - Demonstrate proof of concept for lead alternate vaccine delivery system(s). Complete preclinical research studies and prepare recommendations to support transition of commercial technology for alternate vaccine delivery out of the technology base.
- 1680 Vaccine Research Support, Recombinant Ricin Vaccine (DTO CB46) - Complete a comprehensive review of results with lead candidate, including potency, efficacy, adjuvant studies, toxicity and pathology studies in rodents. Complete efficacy studies and pathology in higher animal species with the lead vaccine candidate.
- 3070 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Continue testing candidates in available animals for EEE vaccine. Determine the compatibility of vaccine candidate, V3526, and vaccine platforms in animals.

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2005 Planned Program (Cont):

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

Total 12526

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2006 Planned Program:

- 900 Vaccine Research Support, Recombinant Ricin Vaccine (DTO CB46) - Complete formulation and stability studies. Provide technical data from completed vaccine research studies to the advanced developer for incorporation into an Investigational New Drug (IND).
- 3000 Multiagent Vaccines, Western and Eastern Equine Encephalitis (WEE/EEE) Vaccine Constructs for a Combined Encephalitis Vaccine (DTO CB58) - Continue evaluating combinations of EEE, WEE, and V3526 or alternate VEE constructs (the DNA- or replicon-based vaccine platforms) in animal models.
- 1900 Multiagent Vaccines, Vaccine Technologies for Protection Against Filovirus (Marburg and Ebola Viruses) Exposure (DTO CB60) - Conduct animal models of aerosol infection with filoviruses. Continue recombinant subunit vaccine development for Ebola virus. Prepare good manufacturing product (GMP) grade candidate vaccine materials for pre-IND studies.
- 1000 Resuscitative Intervention - Determine optimum dose mixture and route of entry for trivalent vaccine and evaluate any potential antigen interference phenomena. Prepare IND data package for filovirus vaccine candidate.
- 4000 Multiagent (Broad Spectrum) Medical Countermeasures - Accelerate promising multiagent vaccine candidate platforms such as virus-like particles, bacterial ghosts, spore-based vaccines and attenuated viral carriers.

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

DATE: **February 2005**

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

FY 2006 Planned Program (Cont):

- 4442 Vaccine Research Support - Evaluate animal studies which support clinical trials of selected vaccine candidates against bacterial threat agents. Continue technology base studies in support of the development and eventual FDA licensure of the ricin and recombinant plague F1-V vaccine candidates. Expand challenge studies against selected intracellular pathogen candidate vaccines and cell-mediated immunity. Evaluate studies on multivalent BoNT vaccine candidates to protect against multiple BoNT serotypes. Proceed with evaluation of promising vaccine strategies in higher animal species for ability to protect against filoviruses. Evaluate next generation SEA/SEB immunogens as vaccine candidates to protect against multiple SE serotypes in vivo. Finalize stability analysis and immunogenicity of SEB toxin vaccine in support of clinical trial. Complete evaluation of promising EEE/WEE vaccine candidates in higher animal species against EEE or WEE virus challenge. Complete evaluation of poxvirus DNA vaccine. Evaluate the use of the marmoset animal model for possible future challenge studies requiring non-human primates. Complete data packages for Staphylococcus enterotoxin vaccine candidates. Prepare GMP lots of selected vaccine candidates for animal safety and challenge studies. Accelerate the evaluation of genetic vaccine candidates in non-human primate model systems for poxviruses (DNA vaccine). Increase the evaluation of the human immune response to selected target antigens.

Total 15242

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

DATE: **February 2005**

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

FY 2007 Planned Program:

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

Total 9174

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

DATE: February 2005

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

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

PROJECT: TB3

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

FY 2004 Accomplishments:

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

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

DATE: **February 2005**

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

FY 2004 Accomplishments (Cont):

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

Total 9451

FY 2005 Planned Program:

- 2917 Therapeutics, Bacterial - Advance the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research.
- 5861 Therapeutics, Toxin - Continue proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of Staphylococcal Enterotoxin (SEs). Enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.
- 2200 Therapeutics, Viral - Finish characterization of genes identified in random homozygous knock-out screening and their evaluation as drug targets. Finish screening for inhibitors of ribonucleic acid (RNA) polymerase. Evaluate novel targets obtained from proteomic studies.
- 540 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Complete technical data package supporting FDA approval of a labeled indication for pre- and post-exposure treatment for smallpox with intravenous (IV) cidofovir by the drug license holder.

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

DATE: **February 2005**

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

FY 2005 Planned Program (Cont):

- 4430 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Continue to evaluate high affinity recombinant human antibodies against Botulinum Neurotoxins (BoNT) in vivo. Develop surrogate endpoints of human clinical efficacy for BoNT therapeutics. Evaluate neuronal drug delivery systems for leading BoNT treatment modalities in vitro and ex vivo.
- 1940 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determine therapeutic potential of candidate drugs in small animal models, including determination of the optimum dose, route and schedule (DRS) for delivery of the drug and the therapeutic window (latest time treatment can be initiated).

Total 17888

FY 2006 Planned Program:

- 2677 Therapeutics, Bacterial - Continue to advance the assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research.
- 2750 Therapeutics, Toxin - Continue to conduct proof-of-concept studies in animal models with lead compounds shown to have potential as inhibitors of target toxins (botulinum neurotoxin, ricin, SEs). Enhance aerobiology capabilities and animal model development to facilitate toxin therapeutics research.

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DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2006 Planned Program (Cont):

- 2455 Therapeutics, Viral - Continue evaluating new drug formulations or prodrugs for orthopox viruses. Enhance aerobiology capabilities and animal model development to facilitate viral therapeutics research. Perform dose ranging studies in primates for lead prodrug compounds for orthopox. Complete studies on short interfering RNA-mediated effects on Ebola.
- 300 Therapeutics, Viral, Therapy for Smallpox and Other Pathogenic Orthopox Viruses (DTO CB54) - Perform testing in non-human primates (NHPs) for FDA licensure consideration under the FDA Animal Efficacy Rule. Develop and execute initial steps in plan for licensure and manufacturing of candidate, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging orthopox therapeutic modalities into suitable candidate therapies in humans.
- 5700 Therapeutics, Toxin, Therapeutic Strategies for Botulinum Neurotoxins (DTO CB59) - Develop a technology from the information generated from this research development plan for nonclinical studies of optimum therapeutic candidates/treatment modalities. Determine and demonstrate the most suitable delivery system for the lead peptide inhibitors. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans, specifically as a complement to future vaccination strategies.

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

DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2006 Planned Program (Cont):

- 2300 Therapeutics, Viral, Therapeutic Strategies for Treating Filovirus (Marburg and Ebola Viruses) Infection (DTO CB63) - Determine the effect of treatment on viral pathogenesis in the mouse Ebola virus model or other more appropriate small animal model such as mice and guinea pigs for Marburg. Perform efficacy studies in NHP models that provide the best model for evaluation of the potential for treating filoviruses. Develop and execute initial steps in plan for licensure and manufacturing with lead compounds, leading up to milestone approval and transition. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging viral therapeutic modalities into suitable candidate therapies in humans.
- 1000 Resuscitative Intervention - Screen available technologies being developed for "golden hour" treatment of combat casualties against current medical countermeasures for nerve agent pre-treatment and therapy for drug interaction effects. Begin development of in silico modeling of patient physiological response to chemical (nerve) agent to establish treatment response guidelines and to assist in evaluation of drug interaction effects.

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE February 2005
BUDGET ACTIVITY **RDT&E DEFENSE-WIDE/** **BA3 - Advanced Technology Development (ATD)**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ATD)**
	PROJECT **TB3**

FY 2006 Planned Program (Cont):

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

Total 41182

FY 2007 Planned Program:

- 3287 Therapeutics, Bacterial - Continue assessment of selected compounds for safety and efficacy against multiple bacterial threat agents in non-human primates. Enhance aerobiology capabilities and animal model development to facilitate bacterial therapeutics research. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging bacterial therapeutic modalities into suitable candidate therapies in humans.

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DATE: **February 2005**

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

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

PROJECT: **TB3**

FY 2007 Planned Program (Cont):

- 6300 Therapeutics, Toxin - Finish proof-of-concept studies and aerobiology studies in animal models with lead compounds shown to have potential as inhibitors of target toxins (botulinum neurotoxin, ricin, SEs). Define and demonstrate in vivo suitable delivery systems for lead candidate compounds. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging toxin therapeutic modalities into suitable candidate therapies in humans.
- 3700 Therapeutics, Viral - Continue to complete technical data package supporting FDA approval of a labeled indication for pre- and post-exposure treatment for smallpox with intravenous (IV) Cidofovir by the drug license holder. Refine and demonstrate, to the extent possible, additional resuscitative technologies that integrate established and emerging orthopox therapeutic modalities into suitable candidate therapies in humans.
- 1000 Resuscitative Intervention - Complete all evaluations of oral pro-drug vs. IV Cidofovir for efficacy against variola at the CDC and prepare final data package for IND submission requirements. Expand initial development of the in silico modeling of patient physiological response to chemical (nerve) agent into an operational capability model for physician use.

Total 14287

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

FY 2005 Planned Program:

- 2777 Anthrax and Oral Plague Vaccine Development -

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

PROJECT: **TB3**

FY 2005 Planned Program (Cont):

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

Total 14033

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

FY 2005 Planned Program:

- 562 SBIR

Total 562

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DATE: **February 2005**

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

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

PROJECT: **TB3**

C. Other Program Funding Summary:

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

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TC3	MEDICAL CHEMICAL DEFENSE (ATD)	10097	13129	24363	19222	32238	31302	32460	34454	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC3 MEDICAL CHEMICAL DEFENSE (ATD): This project supports the investigation of new medical countermeasures to include prophylaxes, pretreatments, antidotes, skin decontaminants and therapeutic drugs to protect U.S. forces against known and emerging chemical warfare threat agents. Capabilities are maintained for reformulation, formulation, and scale-up of candidate compounds using current good laboratory practices. Analytical stability studies, safety and efficacy screening, and preclinical toxicology studies are performed prior to full-scale development of promising pretreatment or treatment drug compounds. Entry of candidate pretreatment/prophylaxes, therapeutics, and diagnostic technologies into development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) application and licensure processes and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas in medical chemical defense capability areas (Pretreatments, Diagnostics, Therapeutics and Emerging Threats), and directed research efforts (Low Level Chemical Warfare (CW) agent exposure and Non-Traditional Agents (NTAs)). Categories under this project address the Joint Requirements Office (JRO) critical capability gaps identified in the baseline capability assessment performed in FY03. The specific critical capability gaps addressed are Gap #14 (Medical Prophylaxes - Lack of multi-valent vaccines), Gap #15 (Medical Prophylaxes - Lack of prophylaxes for chemical warfare agents), Gap #16 (Medical Prophylaxes - FDA Approval for radiological prophylaxes), Gap #22 (Medical Therapeutics - Limited anti-viral/ toxin development), Gap #24 (Medical Therapeutics - Lack of FDA Approval for CBRN), Gap #35 (Diagnostics - Lack of portability), Gap #36 (Diagnostics - FDA Approval) and Gap #38 (Diagnostics - Reagent Verification).

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

DATE: February 2005

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

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

PROJECT: TC3

B. Accomplishments/Planned Program

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

FY 2004 Accomplishments:

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

Total 314

FY 2005 Planned Program:

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

Total 388

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

FY 2006 Planned Program:

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

Total 609

FY 2007 Planned Program:

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

Total 610

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

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

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

Total 1300

FY 2005 Planned Program:

- 1256 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Evaluate the effects of selected pretreatment and/or therapeutic medical countermeasures, to include the FDA-approved Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP), on the detrimental actions of low dose chemical warfare nerve agent exposure in guinea pigs.

Total 1256

FY 2006 Planned Program:

- 1958 Chemical Warfare Agent Defense, Low Level CW Agent Exposure - Complete studies on the effects of chronic low dose chemical exposure and possible medical countermeasures.
- 2700 Chemical Warfare Agent Defense, Low Level CW Agent Exposure: Effects and Countermeasures (DTO CB51) - Complete integration studies to determine the long term effects of exposure to low levels of chemical agents and determine their relevance to operational risk management hazard assessment. Complete DTO CB51.

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

FY 2006 Planned Program (Cont):

- 4000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures (DTO CB57) - Complete studies on the efficacy of barrier skin creams on NTAs and determine the effectiveness of current skin decontamination kits in treating NTA skin contamination. Determine the efficacy of oximes and human butyl cholinesterase against NTAs. Complete DTO CB57.
- 2000 Nerve Agent Defense, Non-Traditional Nerve Agent Medical Countermeasures - Evaluate the pharmacokinetics of improved candidate medical countermeasures for comparison to the in vivo (inside the organism) persistence of NTAs. Conduct studies on human-derived butyrylcholinesterase (plasma and recombinant) as a bioscavenger protective molecule.

Total 10658

FY 2007 Planned Program:

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

Total 2034

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

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

DATE: **February 2005**

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

FY 2004 Accomplishments:

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

Total 2459

FY 2005 Planned Program:

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

Total 2999

FY 2006 Planned Program:

- 6496 Nerve Agent, Bioscavengers - Continue evaluation of catalytic bioscavenger (Block II) efficacy in animal model studies for safety and efficacy. Support studies for recombinant bioscavenger (Block II) transition to IND status. Perform advanced studies of in vivo expression systems for the delivery of bioscavengers. Explore utility of peptide drugs as potential catalytic bioscavengers. Continue studies of the 3-D crystallographic structures of human carboxylesterase (CaE) and paraoxynase 1 (PON-1).

Total 6496

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

FY 2007 Planned Program:

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

Total 8848

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

FY 2004 Accomplishments:

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

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

FY 2004 Accomplishments (Cont):

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

Total 6024

FY 2005 Planned Program:

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

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

FY 2005 Planned Program (Cont):

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

Total 8379

FY 2006 Planned Program:

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

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

DATE: **February 2005**

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

FY 2006 Planned Program (Cont):

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

Total 6600

FY 2007 Planned Program:

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

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

DATE: **February 2005**

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

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

PROJECT: **TC3**

FY 2007 Planned Program (Cont):

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

Total 7730

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

FY 2005 Planned Program:

- 107 SBIR

Total 107

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

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

PROJECT: **TC3**

C. Other Program Funding Summary:

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

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

DATE: **February 2005**

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

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

PROJECT: **TR3**

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TR3	MEDICAL RADIOLOGICAL DEFENSE (ATD)	0	0	0	2200	4500	4156	4500	6865	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TR3 MEDICAL RADIOLOGICAL DEFENSE (ATD): This project funds preclinical development of safe and effective prophylaxes for pre-exposure to radiological threats. A broad range of technologies involved in the targeting and delivery of prophylactic medical countermeasures is evaluated so that the most effective countermeasures are identified for development. Entry of candidate pretreatment technologies into development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) and licensure processes and DoD acquisition regulations. Program objectives focus on mitigating the health consequences from exposures to ionizing radiation that represent the highest probable threat to US forces under current tactical, humanitarian, and counter terrorism mission environments. Findings from basic and developmental research are integrated into highly focused advanced technology developments studies to produce the following: 1) protective therapeutic studies; 2) novel biological markers and delivery platforms for rapid, field-based individual dose assessment; and 3) experimental data needed to build accurate models for predicting casualties from complex injuries involving radiation and other battlefield insults

B. Accomplishments/Planned Program

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

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

DATE: **February 2005**

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

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

PROJECT: **TR3**

FY 2007 Planned Program:

- 2200 Radioprotectants - Continue further testing a promising candidate drug that was found to have a dose-reduction factor (DRF) of 1.20 or greater in rodents. Initiate studies including preclinical efficacy in a large animal model, non-clinical toxicological and pharmacokinetic analysis, assessment of drug mechanism, and initial determination of formulation.

Total 2200

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

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

DATE: **February 2005**

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

COST (In Thousands)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
TT3	TECHBASE TECHNOLOGY TRANSITION	0	0	16207	13978	10783	11077	11523	11857	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TT3 TECHBASE TECHNOLOGY TRANSITION: This project supports technology transition efforts. These efforts test and demonstrate technologies being developed for transition from the Joint Science and Technology Office (JSTO) to the Joint Program Executive Officer (JPEO). This project, which will be initiated in FY06, is funded by realignment of funds: BA6, Anti Terrorism; BA3, CB3 funds for Technology Readiness Evaluations; BA3, CP3 funds for Counter Proliferation Support Program, ACTD Planning and Development; and BA3, CM3 Homeland Defense, Civil Support Teams .

The WMD-CST group includes funds from the former CM3 project (FY05 and earlier) which funds Pre-Systems Acquisition in support of Consequence Management teams around the nation. The technology transition project also supports Advanced Technology Demonstrations and planning for Advanced Concept Technology Demonstrations in the Experimentation and Technology Demonstration group. The Force Protection group demonstrates and tests technology for Force Protection/Installation Protection and specifically for PM Guardian's Installation Protection Program. The Technology Readiness Assessment group funds testing on technologies transitioning out of the Physical Sciences and Medical Science and Technology programs to meet specific criteria postulated by the JPEO in Technology Transition Agreements or tests technologies provided in response to a Broad Agency Announcement in order to satisfy an acquisition strategy for a Joint Program Manager working for the JPEO. This project also includes the transition of the Portal program from DARPA.

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

DATE: February 2005

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

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

PROJECT: TT3

B. Accomplishments/Planned Program

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

FY 2006 Planned Program:

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

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

DATE: **February 2005**

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

FY 2006 Planned Program (Cont):

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

Total 8670

FY 2007 Planned Program:

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

Total 6282

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

DATE: **February 2005**

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

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

PROJECT: **TT3**

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

FY 2006 Planned Program:

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

Total 505

FY 2007 Planned Program:

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

Total 516

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

FY 2006 Planned Program:

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

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DATE: **February 2005**

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

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

PROJECT: **TT3**

FY 2006 Planned Program (Cont):

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

Total 4567

FY 2007 Planned Program:

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

Total 4714

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

FY 2006 Planned Program:

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

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DATE: **February 2005**

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

FY 2006 Planned Program (Cont):

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

Total 2465

FY 2007 Planned Program:

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

Total 2466

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DATE: **February 2005**

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

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

PROJECT: **TT3**

C. Other Program Funding Summary:

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