DoD Joint Service
Chemical/Biological Defense Program

RDT&E Descriptive Summaries for
FY 2001 President's Budget

February 2000

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Chemical and Biological Defense Program
FY 2001 RDT&E PROGRAM **EXHIBIT R-1**

APPRORPRIATION: 0400D Research, Development, Test & Eval, Defwide **Date: FEB 2000**

Line No	Program Element Number	Item	Act	Thousands of Dollars FY 1999	FY 2000	FY 2001	SEC
7	0601384BP	Chemical and Biological Defense Program	1	28,505	44,040	33,197	U
	Basic Research			28,505	44,040	33,197	
16	0602384BP	Chemical and Biological Defense Program	2	62,301	97,400	73,600	U
	Applied Research			62,301	97,400	73,600	
33	0603384BP	Chemical and Biological Defense Program – Advanced Development	3	59,186	56,911	46,594	U
	Advanced Technology Development			59,186	56,911	46,594	
74	0603884BP	Chemical and Biological Defense Program – Dem/Val	4	61,409	68,502	83,800	U
	Demonstration and Validation			61,409	68,502	83,800	
82	0604384BP	Chemical and Biological Defense Program – EMD	5	103,159	118,458	100,815	U
	Engineering and Manufacturing Development			103,159	118,458	100,815	
113	0605384BP	Chemical and Biological Defense Program	6	25,099	24,553	23,907	U
114	0605502BP	Small Business Innovative Research - Chemical Biological Def	6	5,638			U
	RDT&E Management Support			30,737	24,553	23,907	
Total Chemical and Biological Defense Program				345,297	409,864	361,913	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
1 - Basic Research

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

	COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	28505	44040	33197	30990	30004	30973	31969	Continuing	Continuing
CB1	CHEMICAL/BIOLOGICAL DEFENSE (Basic Research)	5662	8541	2452	3565	3279	3468	3585	Continuing	Continuing
TB1	MEDICAL BIOLOGICAL DEFENSE (Basic Research)	15108	27502	20753	17777	18428	18763	19382	Continuing	Continuing
TC1	MEDICAL CHEMICAL DEFENSE (Basic Research)	7735	7997	9992	9648	8297	8742	9002	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) funds the Joint Service core research program for chemical and biological (CB) defense (medical and non-medical). The basic research program aims to improve the operational performance of present and future Department of Defense (DoD) components by expanding knowledge in militarily relevant fields for CB defense. Moreover, basic research supports a Joint force concept of a lethal, integrated, supportable, highly mobile force with enhanced performance by the individual soldier, sailor, airman, or marine. Specifically, the program promotes theoretical and experimental research in the chemical, biological, and medical sciences. Research areas are determined and prioritized to meet Joint Service needs as stated in mission area analyses and Joint operations requirements, and to take advantage of scientific opportunities. Basic research is executed by academia, including Historically Black Colleges and Universities and Minority Institutions (HBCU/MIs), industry, and government research laboratories. Funds directed to these laboratories and research organizations capitalize on scientific talent, specialized and uniquely engineered facilities, and technological breakthroughs. The work in this program element is consistent with the Joint Service Nuclear, Biological, and Chemical (NBC) Defense Research, Development, and Acquisition (RDA) Plan. Management of funding resources leads to expeditious transition of the resulting knowledge and technology to the applied research (PE 0602384BP) and advanced technology development (PE 0603384BP) activities. This project also covers the conduct of basic research efforts in the areas of real-time sensing and diagnosis and immediate biological countermeasures. The projects in this PE include basic research efforts directed toward providing fundamental knowledge for the solution of military problems and therefore are correctly placed in Budget Activity 1.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **1 - Basic Research**

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

B. Program Change Summary:	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/FY 2001)	29500	31386	31332
Appropriated Value	28697	44886	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-477		
c. Omnibus or Other Above Threshold Reductions	565	-89	
d. Below Threshold Reprogramming	-280	-287	
e. Rescissions		-470	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			1865
Current Budget Submit (FY2001/PRES BUD)	28505	44040	33197

Change Summary Explanation:

Funding: FY00 - Congressional Adjustments - CB1 (6500) for chemical biological detectors; chemical biological detector programs; research for optical devices for standoff chemical biological detection. TB1 (7000) for medical biological research.

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
1 - Basic Research

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

PROJECT
CB1

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CB1	CHEMICAL/BIOLOGICAL DEFENSE (Basic Research)	5662	8541	2452	3565	3279	3468	3585	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB1 CHEMICAL/BIOLOGICAL DEFENSE (Basic Research): This project funds basic research in chemistry, physics, mathematics and life sciences, fundamental information in support of new and improved detection technologies for biological agents and toxins; new and improved detection technologies for chemical threat agents; advanced concepts in individual and collective protection, new concepts in decontamination and information on the chemistry and toxicology of threat agents and related compounds.

FY 1999 Accomplishments:

- 920 Biosensors - Performed sequencing of high affinity recognition elements and expanded the list of target bioagents. Synthesized fluorescent detection complexes and began integration with epoxy chips. Demonstrated significant increase in sensitivity of an immunodetection method using dendrimer bound antibody.
- 1130 Aerosol Science - Assembled and tested a laboratory technology to allow visualization of changes in growing bacterial cultures as a rapid detection method for bio-active threats. Completed scattering model theorem and mathematical simplification to allow it to run in reasonable times on small computers for stand off and point detection of biological particles in air.
- 242 Chemistry and Toxicology of Bioactive Compounds - Tested specific or hepatocyte-dependent cytotoxicity on liver cells to determine if biotransformation of the test cell results in a product capable of inducing a cytotoxic effect in a particular target organ cell line. Began to establish binding selectivity with agent simulants of molecular imprinting detection mechanism. Initiated studies of potential protective overcoatings for molecular imprinting detection mechanism. Initiated study of a percarbonate based reactive decontaminant formulation.
- 3370 Man-Portable Thin-Film Detection Technology - Initiated studies on the control of variability in film quality, and stability through the use of silane linkages onto piezoelectric materials. Explored the use of "shape" selective surfaces with attachment of biomolecules and the mechanism for interaction on semiconductor metal oxide (SMO) sensing elements.

Total 5662

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
1 - Basic Research	0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	CB1

FY 2000 Planned Program:

- 836 Biosensors - Deliver purified oligomer recognition elements for the detection of Bacillus anthracis and Yersinia pestis. Continue conjugate synthesis and integration of specific fluorescent polymer/binding agent complexes. Continue synthesis of antibody/dendrimer tag complexes and begin work on the demonstration of separation/identification of dendrimer bound antibody/antigen couples via capillary electrophoresis.
- 1031 Aerosol Science - Based on refined scattering model theorem, begin design and fabrication of an instrument to measure the backscatter and image particles, thereby confirming the theorem's projections.
- 250 Chemistry and Toxicology of Bioactive Compounds - Complete project on cytotoxicity screening methods and transition the work to routine use throughout the toxicology program. Make a selection of the coating technology to be used in the molecular imprinting technique for the Individual Passive Chemical Agent Detector project. Continue rate studies on the percarbonate based decontaminant formulation to include work with surety materials. Expand peroxide activators to other technologies with promise for greater percent hydrogen ion (pH) range efficacy. Begin project to create a filtration performance model based upon an understanding of adsorption equilibria and rate processes; begin with development of database of adsorption equilibrium measurements.
- 6300 Man Portable Thin Film Technology - Continue development and refinement of SMO thin film technology with controlled architecture to detect chemical agents (e.g. nerve, blister, blood) and interferent species (e.g. volatile hydrocarbons, water, and other battlefield interferents). Development would optimize films for both point and cumulative exposure detection applications. Conduct laboratory testing to optimize the sensitivity, selectivity, and stability of SMO sensor elements and arrays as a function of gas environments.
- 124 SBIR/STTR.

Total 8541

FY 2001 Planned Program:

- 971 Biosensors - Perform DNA sequencing of the recognition elements to anthrax spores, cholera toxin and Staphylococcal enterotoxin B. Complete conjugate synthesis and chip integration of specific DNA/fluorescent polymer conjugates. Demonstrate separation/identification of dendrimer bound antibody/antigen couples via capillary electrophoresis.
- 1192 Aerosol Science - Complete confirmation of the scattering model theorem by demonstrating imaging of biological cluster particles. Transition the technology to the applied research program for further development.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY 1 - Basic Research	PE NUMBER AND TITLE 0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)
	PROJECT CB1

FY 2001 Planned Program (Cont):

- 289 Chemistry and Toxicology of Bioactive Compounds - Continue studies of the percarbonate based decontaminant formulations by determining reaction product distributions and correlate equilibrium concentrations with solvent properties. Complete measurement of requisite adsorption rate data and begin development of a continuous adsorption model for filter performance. Begin new project to determine how novel organophosphorus compounds may achieve delayed toxic effects without inducing initial common symptoms.

Total 2452

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
1 - Basic Research

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

PROJECT **TB1**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TB1	MEDICAL BIOLOGICAL DEFENSE (Basic Research)	15108	27502	20753	17777	18428	18763	19382	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB1 MEDICAL BIOLOGICAL DEFENSE (Basic Research): This project funds basic research, i.e., pre-Milestone (MS) 0, on the development of vaccines and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, viruses, and other agents of biological origin. This project also funds basic research employing biotechnology to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Broad categories for this project include countermeasures (vaccines and therapeutics) to bacteria, toxins, and viruses; diagnostics; and broad-spectrum generic medical countermeasures (not agent specific). A subset activity underlying each category is the development of an understanding of the pathogenesis (mechanisms of disease) of these agents to include an understanding of functional genomics of threat agents. Acquiring complete genetic information of validated and novel threat agents provides a strong foundation for development of future medical countermeasures and rapid diagnostics. The broad categories may occasionally address more than a single agent group (i.e., bacterial/viral countermeasures reflects a focus on both groups of agents).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
1 - Basic Research	0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	TB1

FY 1999 Accomplishments:

- 2524 Bacterial Countermeasures - Identified and characterized expression systems for virulence factors cloned from bacteria and rickettsia (glanders and typhus organisms), and performed isoelectric point analyses of the three protein components of anthrax toxins to better understand genetic differences among isolates; characterized antigenic relationships among numerous strains of Burkholderia mallei (glanders) and evaluated the sensitivity and specificity of an immunologic assay (ELISA) for use in vaccine development studies for glanders.
- 1125 Bacterial Countermeasures - Identified and evaluated the biological activity of several virulence factor proteins of Yersinia pestis for their role in pathogenesis.
- 1279 Bacterial Countermeasures - Investigated the capability of various adjuvants to enhance mucosal immunity to Brucellae for a potential novel vaccine approach to this threat agent; evaluated the expression system for multivalent Brucella vaccine to obtain cross-protection against various pathogenic strains.
- 1372 Toxin Countermeasures - Determined mechanisms of action of Staphylococcal enterotoxin-induced shock and evaluated a variety of inhibitors of these mechanisms.
- 2552 Toxin Countermeasures - Evaluated potential drugs for post-exposure therapies against ricin toxin using in vitro model system; identified potential inhibitors of the enzymatic activities of botulinum neurotoxin for further study.
- 1377 Diagnostics - Identified and explored new technologies and new antigens and gene markers for medical diagnostics.
- 680 Generic Medical Countermeasures - Evaluated generic countermeasures, such as broad-spectrum antitoxin and antiviral drugs, immunomodulators, and other therapeutics that are not agent-specific. Expanded basic research efforts to understand agent pathogenesis and the immunology of protection against threat agents.
- 791 Viral Countermeasures - Evaluated a broad variety of antiviral compounds for activity against filoviruses using in vitro (non-animal) model systems; further characterized mechanisms of immunity for Venezuelan, eastern, and western equine encephalitis viruses.
- 1511 Viral Countermeasures - Identified molecular targets for therapeutic compounds for protection against filoviruses and orthopox viruses.
- 1751 Bacterial/Viral Countermeasures - Continued full genome sequencing of various biological threat agents and initiated a gene bank (extensive database) search and analysis for a general virulence factor sequence.
- 146 Bacterial/Viral/Toxin Countermeasures - Identified genes coding for antigens from biological threat agent bacteria, viruses and toxins for their suitability for incorporation into multi-agent vaccine technological approaches, to include the virus replicon vaccine vector and naked DNA combination vaccines.

Total 15108

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **1 - Basic Research**	PE NUMBER AND TITLE **0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**
	PROJECT **TB1**

FY 2000 Planned Program:

- 6619 Diagnostics (Medical Biological Defense Research Program) - Generate full-length genetic sequence information of emerging and genetically engineered agents and re-evaluate classical biological warfare and bioterrorism threat agents; perform structural studies for toxins and critical enzymes using X-ray crystallography and other cutting-edge analytical methodologies.
- 5109 Viral Countermeasures - Assess modes of therapeutic protection to filoviruses and orthopox viruses provided by executing drug screening of pharmacological compounds provided by industry; explore novel vaccine strategies for these agents and investigate genetically engineered vaccine candidates (attenuating mutations) for remaining strains of eastern equine encephalitis viruses.
- 1130 Diagnostics - Access biotechnological innovations (i.e., Tech Watch) to provide rapid diagnostic capabilities leading to enhanced warfighter care. Conduct research using new technologies for military application.
- 3515 Bacterial Countermeasures - Evaluate expression system for multivalent Brucella vaccine; continue studying pathogenesis, host immune responses, virulence factors, strain diversity, molecular pathogenesis and correlates of immunity for organisms responsible for plague (Yersinia pestis), glanders (Burkholderia mallei), and anthrax (Bacillus anthracis).
- 4343 Toxin Countermeasures - Identify molecular biology and target mechanisms of action of botulinum toxin and Staphylococcal enterotoxins for exploitation in investigating therapeutic approaches to toxin exposure.
- 590 Generic Medical Countermeasures - Discover and design potential models/systems with emphasis on computer modeling (rational drug design) and in vitro systems for replacement of animal models in biomedical research.
- 1721 Generic Medical Countermeasures - Evaluate generic medical countermeasures, such as broad-spectrum antitoxin and antiviral drugs, immunomodulators, and other therapeutics that are not agent-specific. Incorporate latest scientific advances in immunology into the basic research efforts to understand agent pathogenesis and the immunology of protection against threat agents. Continue investigation of surrogate markers of efficacy for current and future vaccines and therapies.
- 1453 Bacterial/Viral Countermeasures - Obtain genetic sequencing data from a panel of validated threat agents; establish genetic sequences into a database; evaluate sequence data for the potential for genetic engineering and genetic modification of the pathogens; determine genetic fingerprints (genetic identifiers) of various isolates of the organism responsible for plague (Yersinia pestis).
- 1494 Bacterial/Viral Countermeasures - Study host cellular and sub-cellular responses to BW threat agent(s) (anthrax, filoviruses) exposure utilizing microassay technologies and focusing on gene regulation, to identify likely molecular targets for intervention for developing "next generation" (i.e., beyond present day) novel therapeutic strategies for exposures to various biological warfare agents.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
1 - Basic Research	0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	TB1

FY 2000 Planned Program (Cont):

- 1130 Bacterial/Toxin Countermeasures - Refine aerosol exposure animal models (multiple species) required to address FDA regulatory requirements for botulinum toxin, ricin, Staphylococcal enterotoxin B (SEB), and glanders.
- 398 SBIR/STTR.

Total 27502

FY 2001 Planned Program:

- 4533 Bacterial/Viral Countermeasures - Continue studying host cellular and sub-cellular responses to BW threat agent(s) (anthrax, filoviruses) exposure utilizing microassay technologies and focusing on gene regulation, to identify likely molecular targets for intervention; evaluate possible generic intervention points in agent-induced pathophysiology.
- 1712 Bacterial/Viral Countermeasures - Assess broad spectrum therapeutic strategies for exposures to multiple biological warfare threat agents. These strategies will focus on intervention in disease pathogenesis at the molecular level, and identify common host cellular targets for the pathogenic response.
- 3875 Viral Countermeasures - Evaluate results from previous assessment of new compounds that provide protection against filoviruses and orthopox viruses to determine potential new pre- and/or post-exposure therapeutic compounds for further study; assess new genetic technologies for applicability to vaccines for the viral threat agents.
- 596 Generic Medical Countermeasures - Design potential models/systems with emphasis on computer modeling, and in vitro systems for replacement of animal models in biomedical research.
- 2302 Bacterial/Viral/Toxin Countermeasures - Identify generic medical countermeasures against threat agents in suitable model systems; define likely targets in agent pathogenesis and host immune response; establish mechanisms for determining antibiotic resistance; and characterize promising surrogate markers of efficacy for selected vaccines and therapies for further exploratory development research.
- 3976 Bacterial Countermeasures - Investigate pathogenesis (somatic and molecular), host immune responses, virulence factors, strain diversities, and correlates of immunity for the causative agents of plague (Y. pestis), glanders (B. mallei) and anthrax (B. anthracis).
- 3759 Toxin Countermeasures - Identify sites of molecular action and mechanisms of intervention for therapies for botulinum toxin and Staphylococcal enterotoxin (SE) threats; develop models for therapeutic intervention for therapies for botulinum toxin and SE threats.

Total 20753

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
1 - Basic Research

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

PROJECT **TC1**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TC1	MEDICAL CHEMICAL DEFENSE (Basic Research)	7735	7997	9992	9648	8297	8742	9002	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC1 MEDICAL CHEMICAL DEFENSE (Basic Research): This project emphasizes understanding of the basic action mechanisms of nerve, blister (vesicating), blood, and respiratory agents. Basic studies are performed to delineate mechanisms and site of action of identified and emerging chemical threats to generate required information for initial design and synthesis of medical countermeasures. In addition, these studies are further designed to maintain and extend a science base.

FY 1999 Accomplishments:

- 1331 Pretreatments - Using knowledge gained from structural studies, initiated development, using recombinant technology along with site-directed mutagenesis, to develop next generation protection for acute nerve agent poisoning.
- 135 Pretreatments - Synthesized reactive components for use in development of a protective skin barrier cream.
- 3685 Therapeutics - Screened 707 compounds from several chemical classes for viable blister agent post-exposure therapeutic properties.
- 439 Therapeutics - Evaluated novel temporary wound dressing for skin exposed to sulfur mustard (HD). Drafted approaches for use of accelerators of healing for HD-induced wounds.
- 1946 Therapeutics - Established a database of studies relevant to the underlying effects of low-level exposure(s) to CW agents.
- 199 Therapeutics - Evaluated novel drugs as countermeasures against nerve agents to prevent the brain damage and behavioral incapacitation that occurs following nerve agent-induced seizures.

Total 7735

FY 2000 Planned Program:

- 1008 Pretreatments - Develop appropriate knowledge for molecular modeling and site-directed mutagenesis to optimize next generation antidotes to nerve agent poisoning.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
1 - Basic Research	**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**	**TC1**

FY 2000 Planned Program (Cont):

- 1845 Therapeutics - Explore potential for new technologies to intervene or serve as biomarkers in the mustard injury cascade.
- 4101 Therapeutics - Expand database of studies relevant to effects of low-level exposure to chemical warfare agents; determine mechanism of nerve agent toxicity at low doses; identify data gaps. Begin studies to address long-term effects of acute and chronic low-level exposure to chemical warfare agents.
- 927 Therapeutics - Screen antidotes and countermeasures for efficacy against novel threat agents.
- 116 SBIR/STTR.

Total 7997

FY 2001 Planned Program:

- 4546 Diagnostics - Develop highly sensitive, forward deployable assay techniques to determine exposure to low levels of CW agents and subsequent physiological and toxicological effects.
- 2191 Pretreatments - Based on current research strategies, identify new candidate compounds or compound families with potential as pretreatments for vesicant injury.
- 543 Pretreatments - Using knowledge gained from studies in molecular modeling and site-directed mutagenesis, develop next generation antidotes.
- 2146 Therapeutics - Determine mechanism of action of percutaneous exposure to novel threat agents to explain the variation in response to current nerve agent countermeasures.
- 566 Therapeutics - Initiate research efforts to clearly define the optimal hypochlorite concentration for use in decontaminating chemical agent exposed skin and agent contaminated wounds.

Total 9992

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
2 - Applied Research

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

	COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	62301	97400	73600	83185	84480	74872	76467	Continuing	Continuing
CB2	CHEMICAL BIOLOGICAL DEFENSE (Applied Research)	36563	61726	37721	37445	36871	37057	38307	Continuing	Continuing
TB2	MEDICAL BIOLOGICAL DEFENSE (Applied Research)	12175	22206	21509	30017	31638	22088	22985	Continuing	Continuing
TC2	MEDICAL CHEMICAL DEFENSE (Applied Research)	13563	13468	14370	15723	15971	15727	15175	Continuing	Continuing

A. Mission Description and Budget Item Justification: The use of chemical and biological weapon systems in future conflicts is a steadily increasing threat. Funding under this PE sustains a robust defense which reduces the danger of a chemical and/or biological (CB) attack and enables U.S. forces to survive and continue operations in a CB environment. The medical program focuses on development of vaccines, pretreatment and therapeutic drugs, and on casualty diagnosis, patient decontamination, and medical management. In the non-medical area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection systems. Maintaining state-of-the-art CB defensive systems is critical for force protection and CB weapons deterrence. This program also provides for conduct of applied research in the areas of real-time sensing and immediate biological countermeasures. The work in this PE is consistent with the Joint Service NBC Defense Research, Development, and Acquisition (RDA) Plan. Efforts under this PE transition to and provide risk reduction for Advanced Technology Development (PE 0603384BP), Demonstration/Validation (PE 0603884BP), and Engineering/Manufacturing Development (PE 0604384BP). This project includes non-system specific development directed toward specific military needs and therefore is correctly placed in Budget Activity 2.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 2 - Applied Research

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

B. Program Change Summary:	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/FY 2001)	63992	64780	68024
Appropriated Value	63397	99280	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-1055		
c. Omnibus or Other Above Threshold Reductions	78	-197	
d. Below Threshold Reprogramming	-119	-653	
e. Rescissions		-1030	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			5576
Current Budget Submit (FY2001/PRES BUD)	62301	97400	73600

Change Summary Explanation:

Funding: FY00 - Congressional Adjustments - CB2 (25000) for SAFEGUARD program; for chemical biological point detectors; for chemical biological detection programs; for chemical biological hazard detectors; for chemical biological countermeasures. TB2 (5000) for medical protocols for chemical biological defense. Reprogramming from USMC to Chemical Biological Defense Program IAW P.L. 103-160 - CB2 (4500) for aquifer vulnerability efforts; and probable cause detection system.

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
2 - Applied Research

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

PROJECT
CB2

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CB2	CHEMICAL BIOLOGICAL DEFENSE (Applied Research)	36563	61726	37721	37445	36871	37057	38307	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB2 CHEMICAL BIOLOGICAL DEFENSE (Applied Research): This project addresses the urgent need to provide all services with defensive materiel to protect individuals and groups from threat chemical-biological (CB) agents in the areas of: detection; identification and warning; contamination avoidance through reconnaissance; individual and collective protection and decontamination. It also provides for special investigations into CB defense technology to include CB threat agents, operational sciences, modeling, CB simulants, and nuclear, biological, chemical (NBC) survivability. This project focuses on horizontal integration of CB defensive technologies across the Joint Services. The techbase uses Defense Technology Objectives (DTOs) as a means to shape the development of selected technologies.

FY 1999 Accomplishments:

- 1568 Chemical Imaging Sensor, DTO - Demonstrated 9-pixel spectrometer at 30 Hz (offline processing of data) with an increase to system sensitivity by a factor of ten. The CIS provides the world's first real time, high-speed chemical imaging system.
- 836 Laser Standoff (S/O), Chemical Detection DTO - Completed evaluation and design for enhanced sensitivity for Mustard agent and transitioned to advanced development for trade-off/integration in brassboard laser upgrade and continued brassboard build for a multi-purpose detector as described for the Joint Service Warning and Identification Light Detection And Ranging (LIDAR) Detector (JSWILD). Demonstrated range-resolved and topographical measurements for a mixture containing two different simulants.
- 732 Joint Warning and Reporting Network (JWARN), DTO - Completed demonstration of DTO with cost target of $300 per unit, 57.6-kb continuous wireless, and 1-Mb continuous wired data transmission rates using 2 different sensors. Completed tradeoff analysis and documentation, transitioned to JWARN acquisition program.
- 2351 SAFEGUARD - Completed construction of second generation line scanner and high speed Fourier Transform (FT) spectrometer and initiated integration onto platform.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 1999 Accomplishments (Cont):

- 3187 Chemical Point Detection Non-DTO - Downselected from over 150 identified candidates for best technology and initiated breadboard design for water monitor. Investigated and evaluated effects of extended exposure durations and low concentration exposures of chemical agents to verify and validate alarm and warning levels/thresholds for detector systems.
- 2717 Biological Sample Preparation System, DTO - New effort initiated to address automation of bio sample preparation procedures for gene-based and mass spectrometric identification/discrimination of biological materials. Effort is scheduled to be completed in FY01 with target transition to Joint Biological Point Detection System (JBPDS) Block II. Demonstrated sensitivity levels of spore methodologies at or near target metrics. Developed methods for release, detection of spore protein biomarkers in 20 minutes by mass spectrometry (MS). Developed methods for sample cleanup for MS. Evaluated several chemical and physical spore disruption methods for Polymerase Chain Reaction (PCR) detection.
- 1318 Biological Point Detection, Non DTO - Developed force differentiation analyzer assays for simulants at or near sensitivity goals for fielded biological identifiers. Developed new integrated waveguide approach and molded fluidics assembly for multiagent immunosensor. Tested multiple commercial and developmental biosensors at Joint Field Trials (JFT) for comparative value.
- 2352 Biological Early Warning Detection, Non DTO - Downselected among candidate fluorescence based triggers/detectors. Collected lab and field data to evaluate candidate new standoff biodetection approaches. Using single particle fluorescence studies, demonstrated linear response to particle size. Expanded database on optical constants and potential impact of encapsulation on fluorescence based approaches.
- 1869 Biological Genetic Technology, Non DTO - Evaluated prototype human superlibrary for value in providing effective antigen recognition elements using a comprehensive library of antibodies representing the entire human immune response (otherwise known as superlibrary). Continued development, test, and transition of new recombinantly-derived antibody-based recognition elements. Tested botulinum toxin recombinant antibody using dendrimer support on ticket format which demonstrated improved performance over standard ticket implementations.
- 523 Advanced Lightweight Chemical Protection, DTO - Combined advanced membranes with lightweight shell fabrics and novel closure systems into a lightweight CB duty uniform concept.
- 836 Advanced Adsorb Protection Application, DTO - Performed extensive characterization of the agent filtration performance of the layered adsorbed bed concept(s). Layered adsorbed bed concepts are identified as offering the greatest potential of providing high agent capacity and low pressure drop for the Joint Service General Purpose Mask (JSGPM) filter.
- 2300 Individual Protection Non-DTO - Designed and fabricated of integrated mask/helmet models, demonstrated comprehensive respirator encumbrance model, determined mechanisms for heat and mass transport through membranes and textiles, and developed improved laboratory test methods for CB clothing materials.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000	
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	PROJECT **CB2**

FY 1999 Accomplishments (Cont):

- 2477 Collective Protection, Non-DTO - Completed testing of full scale Pressure Swing Absorption (PSA) system on USMC Amphibious Vehicle test bed. Completed full scale testing of Non Developmental Item (NDI) cleanable/regenerable High-Efficiency Particulate Arresting (HEPA) filters. Completed improvement studies/concepts analysis to support the Joint Transportable Collective Protection System (JTCOPS) and Joint Collective Protection equipment (JCPE). Completed initial evaluation of Surface Acoustic Wave (SAW) Residual Life Indicator (RLI) development effort using simulants; initiated CW agent testing of SAW RLI sensor and simulant studies of chemiresistor and photoionization RLI detectors. Completed investigation of CW agent elution from carbon following agent exposure.
- 836 Decontamination, DTO - Initiated genetic reengineering of organophosphorus hydrolase (OPH) and organophosphorus acid anhydrolase (OPAA) enzymes to enhance V-agent hydrolysis. Enhanced Mustard agent (HD) hydrolysis by dendrimer polymer and phase transfer catalysts.
- 3309 Decontamination, Non DTO - Conducted studies on supercritical fluids and non-ozone depleting fluorocarbon solvent systems for sensitive equipment (items) decontamination. Completed joint DoD/DOE evaluation of atmospheric pressure plasma jet system for potential to decontaminate interior spaces. Conducted solution decontamination research focusing upon oxidative and nucleophilic processes in mixed solvent media with additives such as surfactants. Initiated studies to develop new dry powder decontaminants that can be used in a non-developmental applicator system. Initiated a multi-phase program to develop the next generation of reactive sorbent decontaminant based initially upon zeolites and high surface area solids containing oxidation/reduction couples.
- 3056 Supporting Science and Technology, Non DTO - Published 20 reports on threat chemistry including theoretical studies on oximes, thiranes, and salvation in organophosphorus reactions, closed system flash point measurements suitable for highly toxic substances, and replacement of K-125 thickener with Russian analog. Completed International Task Force (ITF) 33 Report containing the technical evaluation by tri-national (US, UK, CAN) scientists of laboratory data on six emerging chemical threat compounds. Threat biology conducted studies of prions, Yersinia plasmids pCad, pFra, pPst, and published analyses of glanders and meliodosis. Completed sealed nose-only rodent exposure facility for evaluating inhalation toxicology of high-risk substances. Aerosol technology demonstrated unique capability to characterize quantitative, particle size dependent transmission efficiency and aspiration efficiency of aerosol inlets up to 60 mph. Characterized three Biological Integrated Detection System (BIDS) inlets and two Joint Biological Point Detection System (JBPDS) Block I brassboard inlets. Identified technical approaches to advanced aerosol collector and inlet technology with promise to overcome tech barrier shortcomings of the existing equipment with respect to meeting future (JBPDS Block II, Joint Biological Remote Early Warning System (JBREWS), Joint Chemical and Biological Universal Detector (JCBUD)) requirements. Deployed transportable aerosol containment sleeve ("stealth tube") with supporting controlled aerosol generation to field tests for standoff biodetection development for JBREWS.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**
	PROJECT **CB2**

FY 1999 Accomplishments (Cont):

- 2926 Modeling and Simulation (MOD/SIM) - Continued model development for simulation of joint force operations in a CBW environment. Developed models for Joint Service CB defense equipment for application in Simulation Based Acquisition (SBA). Continued simulation and wargaming of chemical and biological attack profiles with distribution of vapor, liquid, and solid tracking (VLSTRACK) version 3.0. Initiated development of coupled CB environment/meteorological models for use with forward-deployed weather forecast operations.
- 3370 Man-portable Detectors - Explored and developed polymer film chemistries and advanced Semiconducting Metal-Oxide (SMO) arrays for the detection of CB agents and other chemicals of interest. This effort included fabrication of devices using this technology and laboratory challenge using toxic chemicals.

Total 36563

FY 2000 Planned Program:

- 660 Biological Point Detection, Non-DTO - Downselect to a single exploratory antibody-based biosensor, the Force Amplified Biosensor (FABS). FABS effort is to automate sample prep/processing and enhance assay sensitivity to JBPDS requirement levels. Initiate joint effort with Department of Energy (DOE) Chemical and Biological Nonproliferation Program to collect into single data base ambient background data from multiple U.S. and international sources.
- 2950 Bio Sample Preparation System (BSPS), DTO - Demonstrate fully automated 2 cu ft BSPS concept coupled with gene probe sensor and next-generation mass spectrometer.
- 1000 Chemical Standoff (S/O) Detection, Non-DTO - Evaluate photo-elastic modulator technology for use in standoff detection systems. Initiated feasibility studies to develop concepts for use and evaluate cost to benefit for use of non-traditional chemical biological (disparate) sensors to cue for early warning.
- 820 Biological Early Warning Detection, Non-DTO - Initiate effort to enhance reliability (false detection reduction) and increase discrimination capability of optical analyzers by adding shape/size analysis. Initiate examination of pyrolysis-gas chromatography-ion mobility spectrometry (Py-GC/IMS) as JCBUD candidate, with emphasis on determining chemical identity of signature markers for simulant bioagents. These approaches are being pursued as candidate technology solutions for implementation in arrayed detector networks.
- 1520 Biological Genetic Technology - Complete revised human superlibrary, assess recombinant antibodies using biosensor testbeds. Evaluate methodologies for turn-around time to develop new Antigen Binding Fragment from "unknowns." Assess value of human superlibrary approach to antibody development. Initiate evaluation of combinatorial peptides as alternative recognition molecules.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2000 Planned Program (Cont):

- 590 Advanced Lightweight Chemical Protection, DTO - Integrate improved closure systems with selectively permeable garment. Fabricate final concept lightweight CB duty uniforms and conduct limited field testing.
- 890 Advanced Adsorb Protection Application, DTO - Complete screening of candidate adsorbent materials for JSGPM. Conduct study and analysis of regenerative filtration designs for JTCOPS/JCPE. Initiate investigations of candidate adsorbent materials for protection against Toxic Industrial Materials (TIMS).
- 4500 Individual Protection, Non-DTO - Conduct interface testing of prototypes and downselect to best helmet/mask interface design. Conduct Joint Service Aviation Mask (JSAM) prototype evaluation and create design guidelines. Combine membrane structural and chemical studies with computer models to identify dominant factors controlling high permselectivity. Identify materials and treatments for aerosol threat mediation. Develop prototype, lightweight textiles utilizing nanofiber technology and incorporating agent reactive catalyst.
- 3610 Collective Protection, Non-DTO - Test low-cost, lightweight tentage materials and transition to JTCOPS. Conduct simulant and CW agent testing of chemiresistor-type RLI and conduct simulant testing of photoionization-type RLIs. Initiate studies to examine the performance of immobilized adsorbent beds. Initiate studies to develop and verify performance models and design rules for advanced regenerative adsorption processes.
- 3318 Chemical Point Detection, Non-DTO - Complete breadboard design and initiate breadboard fabrication for water monitor. Complete baseline for comparison of historical data to new methodology and initiate multi-species animal studies for studying toxicological effects of extended exposure duration and low concentration exposures to validate and verify alarm and warning levels/thresholds for detector systems.
- 1870 Chemical Imaging Sensor, DTO - Demonstrate a 16-pixel spectrometer at 100 Hz (offline process of data). Will be the first system capable of collecting and processing data at these speeds. 100 scans per second represents a factor of 20 improvement over current developmental systems.
- 790 Decontamination, DTO - Continue to increase the activity of enzymes known to have hydrolytic activity on V-agents by genetic engineering. Modify the excellent G-agent enzyme by genetic engineering to also hydrolyze V-agents. Identify new enzymes with V-agent activity. Identify and optimize chemical catalysts for H-agent hydrolysis that are compatible with enzyme technologies. Examine mild oxidants that would convert HD to its sulfoxide which would then be de-chlorinated with enzymes.
- 5645 Decontamination, Non-DTO - Incorporate neutralization processes into the supercritical fluid extraction and non-ozone depleting fluorocarbon systems being developed for sensitive equipment decontamination systems. Demonstrate validity of the techniques for down selection into FY01 Joint Service Sensitive Equipment Decontamination System (JSSED) Block I development program. Conduct studies on novel approaches to achieve decontamination of interiors (JSSED Block II). Optimize solution decontaminants under evaluation and prepare for demonstration phase. Initiate studies using oxidative approaches. Continue studies to formulate dry powder decontaminants to be mixed with aqueous based solvents on-site. Continue work on zeolites and high surface area reactive solids and incorporate reactive nano-particle technology.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000	
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	PROJECT **CB2**

FY 2000 Planned Program (Cont):

- 2690 Supporting Science and Technology, Non-DTO - CB Threat - Identify and technically evaluate emerging chemical threat agents by literature, quantitative structure-activity relationships (QSAR), synthesis of identified new threat materials and toxicology experiments. Design quantitative powder aerosol generator for use in the nose-only exposure chamber with adequate containment for studying high-risk (no antidote) aerosol substances. Disseminate detailed technical information developed on specific new substances, which is needed to guide detection, protection, and vulnerability work, via Joint Service, NATO, and Tri-Partite panels, working groups, and data exchange agreements. Aerosol Technology - Measure performance of candidate aerosol collectors for JCBUD technology, emphasis will be placed on low temperature techniques including non-liquid collection methods. Initiate design and testing of advanced aerosol inlets to meet Joint Service requirements for high collection efficiency over the particle size range from 1-10 micrometers diameter and wind speeds of 2-60 mph. Provide controlled biosimulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for the Joint Field Trials.
- 2632 Modeling and Simulation (MOD/SIM) - Continue model development for simulation of joint force operations for incorporation into advanced simulations like Joint Conflict and Tactical Simulation (JCATS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and Joint Warfare Simulation (JWARS). Continue development of coupled CB environment/meteorological models for incorporation of CBW hazard prediction and tracking into forward-deployed meteorological forecast operations. Develop advanced CBW environment models for more accurate atmospheric transport and fate predictions for battlespace awareness. Continue development of models for Joint Service CB defense equipment for application in Simulation Based Acquisition (SBA).
- 2440 SAFEGUARD, Non DTO - Upgrade sensors and software and complete airborne platform integration in support of an Advanced Warfighting Experiment (AWE) or entry into an Advanced Concept Technology Development (ACTD).
- 7395 Man-portable Detectors, Non-DTO - Develop and optimize polymer coated surface acoustic wave (SAW) and chemiresistive conducting devices that are sensitive and selective to nerve, blister, and blood agent simulants as well as toxic industrial chemicals. Develop impedance and fluorescence-based biosensors employing immunological and DNA detection probes. Integrate hybrid sensor array devices and electronics, neural networks, and other data acquisition and display hardware/software into a prototype detection system for chemical agents. Demonstrate an integrated prototype detector system for CW/BW agents and toxic industrial chemicals under laboratory and field conditions. The goal of these efforts is to develop a man transportable detector with low power and no field maintenance requirements.
- 1970 CB Chemical Hazard Detection, Non-DTO - Develop a deployable CB detection system that can integrate multiple detection technologies such as ion trap spectrometry, electromagnetic energy, neutron-based sensing, for use in detecting nuclear, biological, and chemical weapons.
- 1480 Aquifer Vulnerability, Non-DTO - Investigate vulnerability of aquifers from employment of CB agents on the battlefield.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**
	PROJECT **CB2**

FY 2000 Planned Program (Cont):

- 2753 Probable Cause Detection System, Non-DTO - Develop an effective detection system for detecting and identifying CB agents and toxic industrial chemicals as deployed weapons.
- 11311 CB Countermeasures, Non-DTO - Individual Protection - Develop non-woven techniques to construct fabrics suitable for personal CB protective clothing. Investigate the use of synthetics and natural materials for protective fabric. Decontamination - Investigate the use of electron beam, ultra-violet light, infrared, or microwave radiation for CB decontamination applications. Develop a suite of microorganisms capable of detoxifying CB contaminated soil. Modeling and Simulation - Construct a virtual reality high-rise office building and develop models and visualization methods to monitor the spread of CB agents. Model airborne transport hazard using advanced atmospheric monitoring systems and numerical techniques. Bio Detection - Validate and expand the use of advanced Fourier transfer infrared monitoring technology for rapid detection of airborne mycotoxins. Use polypeptides as targets for the isolation of antibodies in vitro. Use synthetic chemistry to create libraries of unnatural biopolymers that function as nucleic acid binding to develop optical and electrochemical sensor elements. Use low cost electronics to demonstrate the feasibility of rapid and selective detection of specific microorganisms. Consequence Management - Develop a sensor that can detect and characterize deeply buried underground facilities that contain CB materials. Develop a communication architecture that can disseminate information to WMD first responders.
- 892 SBIR/STTR.

Total 61726

FY 2001 Planned Program:

- 2080 Chemical Imaging Sensor (CIS), DTO - Demonstrate a 16-pixel spectrometer in real-time operation at 100 Hz (Online process of data). Represents the first time high performance computers have been used on line for this application. System will also be capable of being mounted on platforms with speeds in excess of 1,000 Miles Per Hour with an imaging capability.
- 1500 Chemical Point Detection, Non-DTO - Continue breadboard fabrication and initiate planning for demonstration of the water monitor. Complete G series agents and initiate V series agents for studying toxicological effects of extended exposure duration and low concentration exposures for validation and verification of alarm and warning levels/thresholds for detector systems.
- 765 Chemical Standoff (S/O) Detection, Non-DTO - Complete concept for use development and cost to benefit analysis of disparate sensor.
- 2788 Biological Sample Preparation System (BSPS), DTO - Incorporate microscale approaches to reduce size of BSPS by 35% while maintaining overall sensitivity on both platforms against eight bacterial and viral materials. Reduce sample preparation time to 15 minutes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**CB2**

FY 2001 Planned Program (Cont):

- 1400 Biological Point Detection, Non-DTO - Complete automation of Force Amplified Biosensor (FABS) and evaluate in Joint Field Trial lab test. Complete analysis of accumulated ambient background data and identify data gaps for further study as indicated by analysis.
- 1760 Biological Early Warning Detection, Non-DTO - Refine discrimination algorithms for optical fluorescence/shape analysis and pyrolysis-gas chromatography-ion mobility spectrometry detectors and subject to chamber and/or field test with bioagent simulants. Identify new Joint Chem Bio Universal Detector (JCBUD) candidates.
- 1558 Biological Genetic Technology, Non-DTO - Assuming prior year assessment supports validity of approach, continue to transition recombinantly derived FABS (antigen-binding antibody fragments) for test, integration into biosensor testbeds. Assess combinatorial peptides against established molecular recognition standards.
- 1100 Advanced Adsorb Protection Application, DTO - Select regenerative filtration designs for JTCOPS/JCPE. Screen candidate adsorbents for TIMs applications.
- 3760 Individual Protection, Non-DTO - Fabricate final helmet/mask interface concept baseline model and conduct systems testing. Investigate the feasibility of increasing polymer permselectivity by ion implantation. Fabricate and test clothing items employing aerosol threat mediation technologies. Characterize prototype, lightweight textiles using nanofiber technology and incorporating agent reactive catalyst.
- 4308 Collective Protection, Non-DTO - Complete RLI sensor screen for chemiresistor and photoionization sensors. Conduct RLI Tech Demo and down-select to one candidate technology. Complete immobilized bed studies. Conduct lab scale testing of an advanced regenerative filtration system. Fabricate and test optimized hermetic seals. Initiate an effort to develop concepts for improving shelter deployability.
- 800 Decontamination, DTO - Produce sufficient V- and H-agent enzymes and reactive polymers to optimize their use in foams, detergent solutions or other types of dispersion systems.
- 5607 Decontamination, Non-DTO - Complete demonstration of sensitive equipment decontamination methodology and transition to the phase I of the JSSED program. Select technologies to be demonstrated for the decontamination of sensitive interiors (JSSED Block II). Continue research of candidate solution chemistry systems to satisfy the requirements for the Superior Decontamination System (SDS) program. Continue the evaluation of novel solid matrices to satisfy the requirements of the Next Generation Decontamination Kit program. Initiate an effort to evaluate alternative approaches to meet this requirement.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000	
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	PROJECT **CB2**

FY 2001 Planned Program (Cont):

- 2695 Supporting Science and Technology, Non-DTO - CB Threat - Identify and technically evaluate emerging chemical threat agents by literature, quantitative structure-activity relationships (QSAR), synthesis of identified new threat materials and toxicology experiments. Identify emerging mid-spectrum bio threats and analytical microbiology capability. Disseminate detailed technical information developed on specific new substances, which is needed to guide detection, protection, and vulnerability work, via Joint Service, NATO, and Tri-Partite panels, working groups, and data exchange agreements. Aerosol Technology - Measure performance of candidate aerosol collectors for JCBUD technology, emphasis will continue to be placed on low temperature, including non-liquid, collection methods and high collection efficiencies. Include chemical simulant aerosol measurements to build technical base for supporting JCBUD aerosol collection requirements. Provide controlled biosimulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for the Joint Field Trials.
- 2600 Modeling and Simulation (MOD/SIM) - Continue model development for simulation of joint force operations for incorporation into advanced simulations like JCATS, JSIMS JMASS and JWARS. Continue development of coupled CB environment/meteorological models for incorporation of CBW hazard prediction/tracking into forward-deployed meteorological forecast/nowcast operations. Continue development advanced CBW environment models for more accurate, higher-resolution atmospheric transport and fate predictions for battlespace awareness and contamination avoidance. Continue development of models for Joint Service CB defense equipment for application in Simulation Based Acquisition (SBA).
- 1500 Novel Bio Sensor Concepts: Identify and qualify for application novel concepts for networked standoff and point chemical and biological sensors for enhanced early warning capability. Novel approaches will include currently fielded non-CB sensors that can provide CB use signatures, such as radar and acoustic sensors, as well as extension of chem standoff approaches to bio detection through optical signatures not presently employed. Point sensors having simultaneous chem and bio detection capabilities will be identified. Networking of these disparate sensors will be accomplished through emerging information management processes.
- 1500 Protection Technologies: Evaluate Ion Implantation as a means of enhancing the permselectivity of polymers. Pursue the most promising respiratory and percutaneous technologies (identified in the FY00 IP Front-End-Analysis) to the reduce respiratory resistance imposed by mask filters and the thermal load imposed by protective clothing. Pursue technologies to support the rapid deployment/establishment of CP Shelters thus reducing the logistical burden normally associated with CP shelters.
- 1000 Simulants for C/B Agents: Evaluate simulant requirements in light of new technology, testing procedures, and environmental and medical issues. Prepare breakthrough simulants for novel and emerging agents for which no simulants currently exist. These new simulants will reduce costs and result in improved testing and evaluation of new defensive equipment.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**
	PROJECT **CB2**

FY 2001 Planned Program (Cont):

- 1000 Biological Detection Technologies: Develop technologies for highly multiplexed identification of biological agents implemented on platforms such as PCR and flow cytometry. This effort will greatly expand the number of agents identifiable in ensemble ID suites with transitions to JBPDS Blk II and to upgrade of fielded systems. The effort will also develop capability to characterize "unknown" biological agents (i.e., agents for which no assay exists).

Total 37721

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **2 - Applied Research**

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

PROJECT: **TB2**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TB2	MEDICAL BIOLOGICAL DEFENSE (Applied Research)	12175	22206	21509	30017	31638	22088	22985	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB2 MEDICAL BIOLOGICAL DEFENSE (Applied Research): This project funds applied research (pre-MS 0) on the development of vaccines, therapeutic drugs and diagnostic capabilities to provide an effective medical defense against validated biological threat agents including bacteria, toxins, viruses and other agents of biological origin. Innovative biotechnological approaches and advances will be incorporated to obtain medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Broad categories for this project include countermeasures (vaccines and therapeutics) to bacteria, toxins, and viruses; diagnostics; and broad spectrum generic medical countermeasures (not agent specific). A subset activity underlying each category is the development of an understanding of the pathogenesis (mechanisms of disease) of these agents to include an understanding of functional genomics of threat agents. Acquiring complete genetic information of validated and novel threat agents provides a strong foundation for development of future medical countermeasures and rapid diagnostics. The broad categories may occasionally address more than a single agent group (i.e., bacterial/viral countermeasures reflects a focus on both groups of agents).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TB2**

FY 1999 Accomplishments:

- 591 Bacterial Countermeasures - Evaluated virulence and protective efficacy of live attenuated Brucellae mutant vaccines in animal models and identified two new model systems in which to assess attenuated mutants of Burkholderia mallei (glanders).
- 3754 Bacterial Countermeasures - Identified adjuvants to enhance immunogenicity of glanders vaccine candidates; constructed recombinant vaccine candidates and evaluated mechanisms for attenuating the agent for typhus vaccine; characterized genetic vectors for plague antigens (F1 and V); and studied host responses to additional plague antigens. Explored use of attenuated anthrax as a vector on other vaccine antigens and conducted comparative serologic study of five species of laboratory animals immunized with licensed anthrax vaccine.
- 1970 Toxin Countermeasures - Tested long-term efficacy of Staphylococcal enterotoxin B (SEB) vaccine candidates and demonstrated that mucosal vaccination elicits protective immunity.
- 500 Toxin Countermeasures - Developed in vitro models and bioassays for evaluating ricin vaccine candidate characteristics and therapeutic compounds.
- 1839 Viral Countermeasures - Identified promising antiviral compounds by screening for therapeutic activity against filoviruses and orthopox viruses in animal models of infection and identified protective monoclonal antibody for Ebola; demonstrated utility of DNA vaccine for orthopox virus immunization.
- 519 Toxin Countermeasures - Determined first complete high resolution crystal structure for botulinum neurotoxin in support of therapeutic drug design and identified promising inhibitors of botulinum toxin enzymatic activity.
- 557 Diagnostics - Applied advanced diagnostic technologies for research in diagnostics tests and devices. Determined methods to extract target molecules for diagnostics from multiple types of biological samples (urine, blood, nasal swabs, etc.).
- 1594 Diagnostics - Developed methods to evaluate mechanisms for increasing the stability (shelf-life) of immunological and nucleic acid diagnostic reagents for field use; demonstrated rapid specimen processing of whole blood using portable automatic device and solid phase methods for purification of nucleic acids without use of hazardous chemicals.
- 851 Bacterial/Viral/Toxin Countermeasures - Incorporated various genes coding for antigens from Bacillus anthracis protective antigen (PA), botulinum toxin, and plague into the virus replicon vector and tested for gene expression using in vitro systems for developing multi-agent vaccines.

Total 12175

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000	
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	PROJECT **TB2**

FY 2000 Planned Program:

- 699 Bacterial Countermeasures - Evaluate antimicrobial agents for treatment of infections caused by aerosolized B. mallei, the causative agent of glanders.
- 2489 Bacterial Countermeasures - Characterize plague virulence factors as vaccine antigen candidates; explore surrogate markers of protection for validated bacterial threat agents; evaluate new generation of antibiotics for therapeutic efficacy against bacterial threat agents.
- 1740 Viral Countermeasures - Define surrogate markers of immunity and other assessment modalities for filovirus immunity, additional strains of equine encephalitis viruses (VEE, EEE, and WEE), and a common vaccine platform leading to a multivalent equine encephalitis vaccine.
- 436 Viral Countermeasures - Analyze and characterize candidate antiviral compounds generated from previous assessment studies for therapeutic activity against orthopox viruses and filoviruses; explore feasibility of DNA-based orthopox virus vaccines.
- 1302 Toxin Countermeasures - Develop therapeutics (peptides and synthetic compounds) for SEB, botulinum neurotoxin, and ricin toxin based on rational drug design and molecular structure of the toxins.
- 2174 Bacterial/Viral Countermeasures - Investigate cellular mediators (cytokines, chemokines and cell surface receptors) during infection and evaluate immunomodulation as a potential countermeasure approach; evaluate the immune response to filoviruses for potential exploitation of immunomodulation as a countermeasure to threat agents.
- 1071 Bacterial/Viral Countermeasures - Establish the correlation of known surrogate markers of immunity with efficacy of existing vaccines and therapeutics in established model systems (two animal models). Establish usefulness of candidate medical countermeasures to potential genetically engineered microbes and emerging threat agents.
- 4716 Bacterial/Viral Countermeasures/Diagnostics (Medical Biological Defense Protocols) - Develop protocols to enhance biological defense by sequencing information on virulence factors, whole organism genomes, and antibiotic resistance markers and obtain information from existing databases and previously conducted and concurrent basic research to generate a comprehensive BW threat agent database; evaluate data for evidence of common patho-physiological mechanisms among threat agents; exploit information in development of novel medical countermeasures and diagnostic platforms.
- 1044 Diagnostics - Define and characterize immunological and nucleic acid-based methodologies leading to the development of rapid diagnostic capabilities for all biological threat agents.
- 2133 Diagnostics - Define nucleic-based screening methodologies to allow rapid identification and genetic association of relatedness/distance between biological agents.
- 2340 Generic Medical Countermeasures/Diagnostics - Apply sample processing technologies to develop diagnostic tests and devices. Apply agent pathogenesis and protective immunology to establish candidate countermeasures. Establish biochemical or molecular target sites for intervention from genomic sequencing information.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**
	PROJECT **TB2**

FY 2000 Planned Program (Cont):

- 1740 Bacterial/Viral/Toxin Countermeasures - Evaluate prior studies performed with individual and combined vaccine candidate components (antigens, DNA, viral vectors, etc.) and determine components to be incorporated into combined multi-agent vaccine candidate.
- 322 SBIR/STTR.

Total 22206

FY 2001 Planned Program:

- 2054 Toxin Countermeasures - Continue defining animal models for aerosol exposure to SEB, botulinum neurotoxin, and ricin toxin. Explore laboratory preparations of candidate botulinum toxin, ricin toxin, and/or SEB vaccines using various adjuvants to enhance immunogenicity.
- 443 Viral Countermeasures - Continue exploration of DNA-based vaccines for orthopox viruses and of the role of antibodies in protection from filoviruses.
- 3759 Toxin Countermeasures - Define protective end-points and surrogate markers for determining the effectiveness of therapies for botulinum neurotoxin and Staphylococcal enterotoxin (SE) threats.
- 1771 Viral Countermeasures - Continue analysis and characterization of candidate antiviral compounds for therapeutic activity against filoviruses and orthopox viruses.
- 1062 Diagnostics - Continue characterization of immunological and nucleic acid-based diagnostic platform methodologies leading to the development of rapid diagnostic device(s) able to identify all biological threat agents.
- 2833 Diagnostics - Develop and evaluate diagnostic assays for virulence factors from Yersinia pestis and other validated bacterial threat agents.
- 4812 Generic Medical Countermeasures - Refine diagnostic technologies (sample and agent processing) as applied directly to the diagnostic tests and devices, emphasizing specific genetic targets. Define therapeutic interventions at the molecular or biochemical level based on genomic sequencing. Refine basic research studies applying technologies to develop novel vaccines or therapies against genetically engineered threats. Define the correlation of known surrogate markers of immunity with efficacy of existing vaccines and therapeutics in established model systems. Characterize promising generic medical countermeasures against threat agents for exploratory development studies in suitable model systems.
- 2423 Bacterial Countermeasures - Continue defining animal models for aerosol exposure to B. mallei (glanders). Explore laboratory formulations of candidate glanders vaccines using various adjuvants to enhance immunogenicity.
- 887 Viral Countermeasures - Evaluate potential interference effects of combined candidate vaccine components in multi-agent vaccines. Select multi-agent vaccine candidates that protect against three or more different threat agents.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **2 - Applied Research**	PE NUMBER AND TITLE **0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)** PROJECT **TB2**

FY 2001 Planned Program (Cont):

- 1465 Bacterial Countermeasures - Continue research on surrogate markers of protection for validated bacterial threat agents and evaluate new generation antibiotics for therapeutic efficacy against bacterial threat agents.

Total 21509

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
2 - Applied Research

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

PROJECT
TC2

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TC2	MEDICAL CHEMICAL DEFENSE (Applied Research)	13563	13468	14370	15723	15971	15727	15175	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC2 MEDICAL CHEMICAL DEFENSE (Applied Research): This project funds medical chemical defense applied research, and emphasizes the prevention of chemical casualties through application of pharmaceuticals for prevention and treatment of the toxic effects of nerve, blister, respiratory, and blood agents. This project supports applied research of prophylaxes, pretreatments, antidotes, skin decontaminants, and therapeutic compounds that will counteract the lethal, physical, and behavioral toxicities of chemical agents. It also supports development of medical chemical defense materiel that ensures adequate patient care, field resuscitation, and patient management procedures.

FY 1999 Accomplishments:

- 5430 Diagnostics - Evaluated analytical procedures in animal models to diagnose and monitor vesicant-induced injury using commercially available instrumentation. Therapeutics - Determine novel mechanisms of action of vesicant agents.
- 1936 Therapeutics - Developed animal models to evaluate skin graft and antimicrobial wound dressings and treatments for blister agents. Assessed the efficacy of antibiotic/steroid ophthalmic preparations for HD-induced injury. Optimized formulations for sponges, towelettes, and surgical pads containing scavenger enzymes for use in wound decontamination.
- 1201 Pretreatments and Therapeutics - Developed enhanced scavengers for nerve agents, characterized the structural alterations of physiologically significant enzymes that are inhibited by nerve agents.
- 1353 Pretreatments and Therapeutics - Assessed the efficacy of leading reactive components of a reactive topical skin protective barrier cream and developed animal decontamination models.
- 3078 Pretreatments and Therapeutics - Developed biological markers to monitor long-term effects of low dose or chronic exposure to CW agents. Evaluated FDA approved pharmaceuticals as potential nerve agent anticonvulsants. Developed an improved electroencephalogram (EEG) test model to evaluate anticonvulsant action of leading compounds against acute and chronic nerve agent poisoning.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)**	**TC2**

FY 1999 Accomplishments (Cont):

- 565 Therapeutics and Diagnostics - Designed and tested an enzyme-based skin and wound decontamination system. Developed far-forward, rapid diagnostic tests for blister and nerve agents for real-time analysis of clinical samples.

Total 13563

FY 2000 Planned Program:

- 3940 Diagnostics - Identify promising analytical procedures for diagnosis and dosimetry of vesicant-induced inflammation.
- 757 Diagnostics - Assess the efficacy of far-forward, rapid diagnostic tests for blister and nerve agents for real-time analysis of clinical samples on the battlefield.
- 1144 Pretreatments - Identify best candidates of genetically engineered scavengers as next generation antidotes for nerve agents.
- 5151 Therapeutics - Assess the efficacy of new, improved countermeasures to vesicant exposure in several model systems, both in vitro and in vivo. Assess the efficacy of antibiotic/steroid ophthalmic preparations for HD-induced injury. Optimize formulations for sponges, towelettes, and surgical pads containing scavenger enzymes for use in wound decontamination.
- 644 Pretreatments and Therapeutics - Estimate the protection achievable by existing countermeasures to novel threat agents.
- 1637 Therapeutics and Diagnostics - Identify pharmacological, physiological, or toxicological methods for monitoring long-term, low-level effects of chemical warfare agents.
- 195 SBIR/STTR.

Total 13468

FY 2001 Planned Program:

- 2442 Pretreatments - Test best candidates of genetically engineered scavengers using advanced test systems, e.g., transgenic or knockout species.
- 4568 Therapeutics - Employing identified models, determine pharmacological, physiological, and toxicological effects of long-term, low-level chemical warfare agents.
- 883 Therapeutics - Assess the efficacy of antibiotic/steroid ophthalmic preparations for HD-induced injury. Optimize formulations for sponges, towelettes, and surgical pads containing scavenger enzymes for use in wound decontamination.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	TC2

FY 2001 Planned Program (Cont):

- 2217 Pretreatments and Therapeutics - Assess the efficacy of fielded, advanced development, and exploratory development countermeasures to novel threat agents.
- 4260 Pretreatments and Therapeutics - Using a drug decision approach (decision tree network), evaluate the efficacy of lead vesicant countermeasure compounds identified in earlier screening efforts.

Total 14370

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
3 - Advanced Technology Development

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

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	59186	56911	46594	53283	62722	83190	80934	Continuing	Continuing
CB3	CHEMICAL BIOLOGICAL DEFENSE (Adv Tech Dev)	21406	20223	6036	7693	10463	12890	14156	Continuing	Continuing
CP3	COUNTERPROLIFERATION SUPPORT (Adv Tech Dev)	7098	10434	10213	11416	7321	7663	13345	Continuing	Continuing
TB3	MEDICAL BIOLOGICAL DEFENSE (Adv Tech Dev)	14079	16809	19980	23063	33154	50328	40819	Continuing	Continuing
TC3	MEDICIAL CHEMICAL DEFENSE (Adv Tech Dev)	16603	9445	10365	11111	11784	12309	12614	Continuing	Continuing

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

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 3 - Advanced Technology Development

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

B. Program Change Summary:	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/FY 2001)	52212	40910	44881
Appropriated Value	51610	57110	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-858		
c. Omnibus or Other Above Threshold Reductions	6517	-115	
d. Below Threshold Reprogramming	1917	73	
e. Rescissions		-157	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			1713
Current Budget Submit (FY2001/PRES BUD)	59186	56911	46594

Change Summary Explanation:

Funding: FY99 - SBIR (-858). FY99 - Above Threshold - CB3 (6338) Funding transferred from USMC to the Chem Bio Defense Program for the Small Unit Biological Detector (SUB-D) and the Chemical Biological Individual Sampler (CBIS). FY99 - Below Threshold - CB3 (2421) for Joint Service Fixed Site Decon research; CB3, TB3, TC3, CP3 (-423) for revised economic assumptions; CB3, TC3, TB3, CP3 (-504) for higher priority programs; TB3 (602) for increased medical biological research. FY00 - Congressional Adjustments - TB3 (1500) for medical biological counterterrorism response program. FY00 - Reprogrammings from USMC to Chemical Biological Defense Program IAW P.L. 103-160 - CB3 (13700) for chemical biological identification system (CBIS); for chemical management information system (CMIS); for small unit biological detector (SUB-D). FY00 - Reprogramming from U.S. Army to Chemical Biological Defense Program IAW P.L. 103-160 - CB3 (1000) for small fast chemical biological detector.

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
3 - Advanced Technology Development

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

PROJECT
CB3

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CB3	CHEMICAL BIOLOGICAL DEFENSE (Adv Tech Dev)	21406	20223	6036	7693	10463	12890	14156	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CB3 CHEMICAL BIOLOGICAL DEFENSE (Adv Tech Dev): This project demonstrates technology advancements for Joint Service application in the areas of: agent detection and identification, decontamination, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented Demonstration and Validation. This project funds the Integrated Biodetection Advanced Technology Demonstration (ATD). This ATD will fabricate, demonstrate and integrate advanced point and standoff biodetection technologies. This project is the only DoD program demonstrating new technologies to counter biological warfare threats and improving current developmental biodetection systems. This program also funds the Small Unit Biological Detector (SUBD) in support of consequence management against terrorist-initiated NBC incidents by demonstrating and developing state-of-the-art sensor technology.

This project funds the Joint Service Fixed Site Decontamination (JSFXD) Program, the Joint Service Warning and Identification LIDAR (Light Detection And Ranging) Detector (JSWILD) Program, the Joint Service Sensitive Equipment Decontamination (JSSED) Program, the Joint Chemical/Biological Agent Water Monitor (JCBAWM), and the Chemical/Biological Individual Sampler (CBIS).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced Technology Development	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**	**CB3**

FY 1999 Accomplishments:

- 2421 JSFXSD - Initiated characterization studies of mature technologies. Initiated biological efficacy and compatibility study. Conducted live agent decontamination testing.
- 5716 Bio ATD - Completed development, miniaturization of third-generation ultraviolet fluorescence particle sensor (reduced size to < 1 cu ft). Completed development, demonstration of first automated DNA diagnostic. Demonstrated soldier operability in Battle Lab Warfighter Experiment June 99.
- 3208 JSWILD - Continued fabrication of brassboard system and initiated planning for demonstration of system.
- 669 JS Large Area Decon - Completed front-end analysis of technologies to address multiple decontamination scenarios which include: skin and personal equipment decontamination, equipment decontamination in the field, equipment decontamination at fixed facilities, key areas at fixed facilities, sensitive equipment decontamination, and decontamination of interior spaces containing sensitive items, surfaces, and cargo. Identified and prioritized technologies for each functional area. Completed a master plan incorporating newly identified leads which will drive the Science and Technology (S&T) area for the coming developmental cycle and will be used to support the JSFXD Program.
- 1554 MONOPAK and Residual Life Initiatives - Prepared a fully permeable single layer (shell and liner) "monopak" chemically protective material for transition to the next joint protective ensemble program. A Chemical Protective Combat Uniform (CPCU) was constructed using the latest Army/Navy closure concepts for a comprehensive durability (7 day) field trial. Under the Residual Life Initiative (RLI), developed several promising concepts to address the condition of chemically protective uniforms. All material and concept item performance will be fully characterized as part of the transition support package.
- 1500 Biocide Ensembles (ATD) - Continued development of advanced biocide CBW protection material and application for personal protection and casualty care.
- 3413 SUBD - Continued development of the detector for continuous air monitoring of biological agents.
- 2925 CBIS - Continued development of a pager style dosimeter that can be worn by individual personnel and is capable of monitoring low level CB agent exposure (CBIS a.k.a. ChemBio Dosimeter).

Total 21406

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BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**
	PROJECT **CB3**

FY 2000 Planned Program:

- 5075 JSWILD - Complete fabrication of brassboard system, initiated Analysis of Alternative for technology to meet requirements and complete planning for demonstration.
- 331 MONOPAK and Residual Life Initiatives - A candidate "monopak" material will transition to the initial Joint Protective Aircrew Ensemble (JPACE) program with final transition to the Joint Chemical Biological Ensemble. Four technical approaches to develop residual life indicators (RLI) for protective clothing are being pursued. One RLI contractor is building a commercial version.
- 4736 CBIS - Develop prototypes for laboratory and field testing. This ensures force medical protection by sampling and recording low levels of Chemical/Biological (CB) agents or Toxic Industrial Materials (TIMs) that a warfighter may be exposed to. This testing will provide information necessary for the collection of targeted CB agents and TIMs at concentrations less than or equal to the Mild Effects Dose (MED), which is defined as the ocular or nasal vapor exposure level at the onset of miosis.
- 4736 Consequence Management Information System (CMIS) - Initiate development of an integrated command and control tool for displaying information relating to all aspects of Weapons of Mass Destruction (WMD) incident response.
- 4052 SUBD - Complete Phase I and II and provide an engineering prototype of components that successfully demonstrates the concept of an automated man-portable system. These prototypes will be comprised of (1) a collector/concentrator that samples the air and concentrates biological aerosols into a fluid media suitable for analysis and (2) a bio-sensor that analyzes the collected samples and identifies the biological agent in 5 to 10 minutes by using immunoassay technology. Initiate Phase III (pre-manufacture prototype development) which will integrate, fabricate, and test an Engineering Prototype based on these components.
- 1000 Small Fast CB Detectors - Conduct warfighting experiment using a proof-of-principle version of the detection system to demonstrate operational application of the concept. Assess the military utility of using small-scale sensors to detect biological or chemical agents in near real-time and relay that information in a timely fashion to tactical elements.
- 293 SBIR/STTR.

Total 20223

FY 2001 Planned Program:

- 740 JSWILD - Demonstrate brassboard system and transition technology to Program Definition and Risk Reduction (PDRR).
- 1985 JCBAWM - Initiate planning for technology transition to PDRR.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)** PROJECT **CB3**

FY 2001 Planned Program (Cont):

- 2313 JSSED - Conduct development of sensitive equipment/items decontamination technologies (Block-I) with emphasis on the advanced development of technologies for interior decontamination (Block-II/III). Support the Defense Systems Acquisition Management Program which provides acquisition and transition management for the JSSED program.
- 998 Detection Technologies - Initiate evaluation for the transition of technology from man-portable detectors to enhance Joint Chemical Agent Detector (JCAD) and potential to meet requirements for Joint Chemical Biological Universal Detector.

Total 6036

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DATE **FEBRUARY 2000**

BUDGET ACTIVITY
3 - Advanced Technology Development

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

PROJECT
CP3

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CP3	COUNTERPROLIFERATION SUPPORT (Adv Tech Dev)	7098	10434	10213	11416	7321	7663	13345	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CP3 COUNTERPROLIFERATION SUPPORT (Adv Tech Dev): The mission of the Counterproliferation Program (CP) is to address shortfalls in the Department of Defense (DoD) deployed capability to defend against and counter the proliferation of weapons of mass destruction (WMD). By focusing on near term results, the CP accelerates delivery of new tools, equipment, and procedures to combat forces. Under the passive defense pillar, CP enhances the efforts of the Chemical and Biological Defense Program. This project funds a variety of programs to defend our forces against WMD, such as the Biological Detection (BIODET), Biological Non-Systems (BIO Non Sys) efforts, Critical Reagents Program (CRP), and Restoration Operations (RestOps).

FY 1999 Accomplishments:

- 600 BIODET - Transitioned advanced materials technologies developed for the Miniaturized Environmental Air Sampler and Concentrator for Biological Materials to the combined aerosol sampler and detector.
- 3060 BIODET - Continued advanced technologies development for high sensitivity biological/chemical agent detection using broadband, miniaturized mass spectrometer techniques.
- 985 BIODET - Continued development upconverting phosphor technology development for miniaturized flow cytometer biological agent detection prototype.
- 583 BIO Non Sys - Collected background aerosol particle data and liquid samples for identification of potential battlefield interferents at outside the continental United States (OCONUS) fixed sites.
- 1870 RestOps - Continued concept development for technology prototyping with supporting survivability and hazard analysis for restoration of operations.

Total 7098

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BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**
	PROJECT **CP3**

FY 2000 Planned Program:

- 943 BIODET - Initiate development of biological identification system using nucleic acids to allow for a less expensive and broader biological detection capability.
- 492 BIODET - Transition of upconverting phosphor technology development for miniaturized flow cytometer biological agent detection prototype.
- 1426 BIODET - Complete first generation of Biological Time-of-Flight (BIOTOF) Mass Spectrometer for transition to field testing.
- 382 CRP - Develop reagents (antibodies and antigens) that are critical to the development, testing, and support of CP Biological Detection Systems.
- 1072 BIO Non Sys - Development, testing and evaluation of automated sample preparation technology for Polymerase Chain Reaction (PCR) devices.
- 2148 BIO Non Sys - Initiate development of non-specific detection, multiplexed assays and associated reagents.
- 1967 RestOps - Initiate development of next generation chemical/biological transport models (to include complex terrain and urban environment) and simulations for Commander in Chief (CINC) Logistics/Warfighting Planning Tools for use the RESTOPS ACTD.
- 1853 RestOps - Initiate development of novel universal chemical/biological decontaminants for use in the RESTOPS ACTD and fixed site decontamination programs.
- 151 SBIR/STTR.

Total 10434

FY 2001 Planned Program:

- 1730 BIODET - Produce nucleic primer libraries for testing and continue development of a biological detection capability using nucleic acids.
- 978 BIODET - Initiate development of new antibodies or their replacements using advanced molecular techniques to achieve faster and less expensive antibody production for use in biological detector assays.
- 386 CRP - Continue to develop reagents (antibodies and antigens) that are critical to the development, testing, and support of CP Biological Detection Systems.
- 2224 BIO Non Sys - Continue development of non-specific detection, multiplexed assays and associated reagents to provide increased identification capability within current hardware constraints.
- 1448 BIO Non Sys - Continue development, testing, and evaluation of automated sample preparation technology and protocols for Polymerase Chain Reaction (PCR) devices to improve identification specificity and sensitivity in future biological systems.
- 759 BIO Non Sys - Initiate development for next generation environmental air sampler to reduce size and improve detection capability.

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BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**
	PROJECT **CP3**

FY 2001 Planned Program (Cont):

- 1344 RestOps - Continue development of next generation chemical/biological transport models (to include complex terrain and urban environment) and simulations for CINC Logistics/Warfighting Planning Tools for use in the RESTOPS ACTD and other fixed site applications.
- 1344 RestOps - Continue development of universal novel chemical/biological decontaminants for use in the RESTOPS ACTD and fixed site decontamination programs.

Total 10213

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DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **3 - Advanced Technology Development**

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

PROJECT: **TB3**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TB3	MEDICAL BIOLOGICAL DEFENSE (Adv Tech Dev)	14079	16809	19980	23063	33154	50328	40819	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TB3 MEDICAL BIOLOGICAL DEFENSE (Adv Tech Dev): This project funds preclinical development (pre-MS I activities) 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 is evaluated so that the most effective countermeasures are identified for transition to Advanced Development (post-MS I). Transitioning candidate vaccines, therapeutics and diagnostic systems to Advanced Development requires the development of scientific/regulatory data packages (preclinical safety, efficacy and toxicity, regulatory documentation on quality control systems) to support the MS I decision, the Food and Drug Administration's (FDA) Investigational New Drug (IND) process, and, in the case of vaccines, preparation of a Biological License Application (BLA) to obtain a licensed product.

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DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced Technology Development	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**	**TB3**

FY 1999 Accomplishments:

- 520 Bacterial Countermeasures - Showed that existing candidate vaccines were effective against selected emerging threat agents or genetically engineered microbes. Compared candidate surrogate markers of immunity to validate vaccine efficacy. Developed system for comparison of genomic sequence database of threat agents and their virulence factors.
- 1870 Bacterial Countermeasures - Compared protective efficacy of live attenuated vs. subunit vaccines (Brucella); initiated development of a surrogate marker ELISA using a monoclonal antibody to the plague F1 protein and initiated evaluation of immune serum derived from dose-response studies in mice; performed initial safety and efficacy studies for typhus and plague vaccine candidates.
- 3703 Toxin Countermeasures - Transitioned recombinant vaccines against botulinum neurotoxin sterotypes A, B, C, E and F to MS I; determined toxicity of drugs in animal models to evaluate use in therapeutic treatment of botulinum neurotoxin and Staphylococcal enterotoxin exposure.
- 1889 Toxin Countermeasures - Continued preclinical trials of ricin A subunit vaccine candidate for safety and efficacy and evaluated surrogate markers of protection; conducted preclinical safety and efficacy trials of ricin A chain in second animal species.
- 1008 Viral Countermeasures - Evaluated data to support eventual milestone transition of eastern equine encephalitis (EEE) virus and western equine encephalitis (WEE) virus vaccines; obtained MS I decision to transition VEE 1A/B infectious clone vaccine candidate to Phase 1; and constructed rapid assay and confirmation-level assay systems for the orthopox viruses to differentiate smallpox.
- 1969 Viral Countermeasures - Evaluated the safety and efficacy of Marburg and Ebola vaccine candidates in animal models; demonstrated for the first time a vaccine candidate that induces protection against Marburg virus.
- 2639 Diagnostics - Evaluated stability of immunological diagnostic reagents and potential endogenous interfering substances to circumvent interference interactions when tested on multiplexed diagnostic platforms; compared candidate diagnostic technologies for down-selection development of diagnostic devices and tests.
- 481 Bacterial/Viral Countermeasures - Began evaluation of multiple vaccine candidates in replicon and naked DNA simultaneous challenge models; constructed models for multivalent vaccines including use of viral (replicon)- or bacterial (Brucellae)-vectored vaccines or DNA vaccines; tested selected combinations of replicon vaccine constructs in animal models and demonstrated that this approach allowed successful immunization in animal models.

Total 14079

FY 2000 Planned Program:

- 1361 Bacterial Countermeasures - Assess the efficacy of new antibiotics against classical threat agents.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**
	PROJECT **TB3**

FY 2000 Planned Program (Cont):

- 1929 Toxin Countermeasures - Prepare (collect, analyze, validate, and organize) all scientific, technical and regulatory documentation in accordance with Food and Drug Administration (FDA) and DoD acquisition requirements to transition to Phase I (i.e., post-MS I) a ricin A subunit vaccine that will protect and reduce lung injury due to inhaled ricin.
- 567 Toxin Countermeasures - Finalize preparation of scientific, technical and regulatory documentation in accordance with FDA and DoD acquisition requirements (transition documentation) supporting the MS I transition of the recombinant multivalent vaccine candidate for botulinum neurotoxins.
- 2099 Toxin Countermeasures - Prepare (collect, analyze, validate, and organize) all scientific, technical and regulatory documentation in accordance with Food and Drug Administration (FDA) and DoD acquisition requirements to transition a Staphylococcal enterotoxin B (SEB) vaccine candidate to Phase I (i.e., post-MS I).
- 2269 Viral Countermeasures - Compare candidate filovirus vaccines in animal models for safety and efficacy against aerosolized filoviruses.
- 794 Viral Countermeasures - Transition to Phase I (i.e., post-MS I) a multivalent vaccine effective against Venezuelan equine encephalitis (VEE) types 1 A/B/C, 1E, and III.
- 284 Viral Countermeasures - Compare efficacy of candidate therapeutic countermeasures against aerosol challenge with orthopox viruses.
- 1133 Diagnostics - Validate PCR and immunologically-based diagnostic assays for a panel of classic, simulated, and potential BW threat agents.
- 1959 Diagnostics - Compare nucleic acid-based methodologies allowing for rapid identification of the genetic association/genetic distance between biological agents leading to the capability to rapidly determine the potential biological threat in the field.
- 1423 Diagnostics (Medical CB Counter Terrorism Response) - Develop and test technologies for biological agent identification; develop laboratory procedures specific for medical diagnosis/identification of chemical/biological (C/B) agent exposure; develop information/educational modules for collecting and processing samples; provide initial technical training for biological counterterrorism response on assays for transition to Rapid Assessment and Initial Detection (RAID) teams operational units of National Guard Mobile Analytical Laboratory System [MALS].
- 1725 Bacterial/Viral Countermeasures/Diagnostics - Continue to compare candidate technologies in applied research on diagnostic devices and tests. Continue advanced screening for efficacy of therapeutic interventions gleaned from genomic sequencing studies, as applied to known threat agents. Continue to develop candidate surrogate markers of immunity for validation as acceptable markers of vaccine efficacy. Compare novel therapies and vaccines developed against genetically engineered potential threats. Prepare preliminary safety and efficacy data for candidate medical countermeasures to emerging threat agents.
- 1022 Bacterial/Viral Countermeasures - Evaluate immunogenicity of a multi-agent vaccine and analyze the data for possible interference interactions between the combined components (i.e., whole organisms, antigens, DNA, viral vectors).
- 244 SBIR/STTR.

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BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**	PROJECT **TB3**

FY 2000 Planned Program (Cont):
Total 16809

FY 2001 Planned Program:

- 1302 Viral Countermeasures - Assemble scientific data of safety, efficacy, and toxicity of candidate filovirus countermeasures (vaccines and therapeutics) in multiple animal model systems.
- 1148 Diagnostics - Prepare (collect, analyze, validate, and organize) all scientific, technical and regulatory documentation in accordance with Food and Drug Administration (FDA) and DoD acquisition requirements to transition to Advanced Development (post-MS I) a portable diagnostic device to identify threat agent nucleic acids.
- 2574 Diagnostics - Compare nucleic acid-based methodologies allowing rapid identification and genetic association/genetic distance of biological agents leading to the capability to rapidly determine the potential biological threat in the field.
- 2341 Generic Medical Countermeasures - Conduct advanced assessment of immunomodulators and other types of broad-spectrum compounds for safety and for efficacy against multiple biological threat agents.
- 1655 Generic Medical Countermeasures - Perform laboratory investigations to obtain data necessary for transition of DARPA-developed diagnostic and preventive therapeutic technologies to DoD applications: safety studies in animals, efficacy studies in animal models, definition of surrogate markers of efficacy, pharmacokinetic studies, formulation studies, assay development, and down selection of candidate compounds.
- 1424 Bacterial/Viral Countermeasures - Test efficacy of products (individually and combined) intended for use in a multi-agent vaccines.
- 2998 Bacterial/Viral Countermeasures - Evaluate candidate immunomodulation strategies using cytokines, chemokines, and cellular receptors as subcellular targets as sites of intervention in the pathogenic process.
- 1391 Bacterial Countermeasures - Evaluate previously identified virulence factors as vaccine candidates for Yersinia pestis; test selected immunomodulators in appropriate animal models, for protection against plague; validate correlates of immunity for protection against Bacillus anthracis; evaluate vaccine candidates and correlates of immunity for Burkholderia mallei.
- 544 Viral Countermeasures - Assemble scientific data from safety, efficacy, and toxicity studies of candidate therapeutic compounds to orthopox viruses in animal models.
- 2302 Bacterial/Viral Countermeasures/Diagnostics - Validate animal models defining agent pathogenesis and immunology. Complete comparison of candidate diagnostic technologies in applied research on diagnostic devices and tests. Complete development of surrogate markers of immunity for validation as acceptable markers of vaccine efficacy.

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BUDGET ACTIVITY **3 - Advanced Technology Development**	PE NUMBER AND TITLE **0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**
	PROJECT **TB3**

FY 2001 Planned Program (Cont):

- 2301 Bacterial/Viral Countermeasures - Complete screening of therapeutic interventions gleaned from genomic sequencing studies, as applied to known threats and their virulence factors. Complete demonstration of usefulness of existing candidate medical countermeasures applied to emerging threat agents or genetically engineered microbes. Demonstrate animal models defining agent pathogenesis and immunology. Demonstrate promising generic medical countermeasures against threat agents for exploratory development studies in suitable model systems.

Total 19980

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
3 - Advanced Technology Development

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

PROJECT
TC3

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
TC3	MEDICIAL CHEMICAL DEFENSE (Adv Tech Dev)	16603	9445	10365	11111	11784	12309	12614	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project TC3 MEDICIAL CHEMICAL DEFENSE (Adv Tech Dev): This project supports the investigation of new medical countermeasures to include antidotes, pretreatment drugs, and topical skin protectants to protect U.S. forces against known and emerging chemical warfare (CW) threat agents. Capabilities are maintained for reformulation, formulation, and scale-up of candidate compounds using current good laboratory practices (GLP). Analytical stability studies and safety and efficacy screening, in addition to pre-clinical toxicology studies, are performed prior to full-scale development of promising pretreatment or treatment compounds.

FY 1999 Accomplishments:

- 1351 Pretreatments - Conducted dose-ranging studies and efficacy studies of candidate nerve agent scavengers.
- 1111 Pretreatments - Assessed the efficacy of and rank ordered 160 barrier creams for reactive topical skin protectants. This led to the down-selection of eight candidates, which will lead to Milestone 0 in FY00.
- 4382 Therapeutics - Assessed efficacy and safety of lead candidate antivesicants in vivo models in support of FY00 Milestone 0.
- 417 Therapeutics - Determined the efficacy of available off-the-shelf, FDA-approved ocular therapies against sulfur mustard (HD). Evaluated in an animal model selected available therapeutic interventions for inhalation exposure to HD, and continued testing of candidate therapies effective against the pulmonary consequences of HD exposure.
- 2123 Therapeutics - Initiated Milestone I technical data package for advanced anticonvulsant. Completed nonhuman primate pharmacokinetic/pharmacodynamic studies with advanced anticonvulsants, which determined the optimal blood levels effective against nerve agent seizures.
- 7219 Therapeutics - Evaluated a research proposal by Wright State University (WSU) to study health effects of low-level exposure to chemical warfare agents. Conducted an extramural and intramural review and provided comments to WSU. Funding is being released based on revised WSU proposals.

Total 16603

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
3 - Advanced Technology Development	**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**	**TC3**

FY 2000 Planned Program:

- 5960 Therapeutics - Prepare supporting documentation for Milestone 0 technical data package for lead countermeasures for vesicant agents. Select lead candidate countermeasures from in vivo and in vitro screens performed at a contractor owned, contractor operated facility dedicated to the medical chemical defense research program. Acquire drugs/compounds in forms acceptable for advanced antivesicant testing.
- 546 Pretreatments and Therapeutics - Select lead compounds for safety and efficacy testing in nonhuman primates against novel threat agents.
- 1756 Pretreatments - Estimate the protection achievable by lead candidate scavengers in animal models.
- 523 Pretreatments - Initiate Phase 0 studies for efficacy and safety of best candidate reactive moieties for reactive topical skin protectants.
- 523 Therapeutics - Confirm the efficacy and safety of advanced anticonvulsant in two animal species, identify important potential interactions with other countermeasures, and transition candidates to Phase 1.
- 137 SBIR/STTR.

Total 9445

FY 2001 Planned Program:

- 1606 Diagnostics - Acquire, modify, and measure advanced development equipment or technologies for far-forward screening and confirmation of exposure to blister and nerve agents; conduct market investigations of existing commercial technologies and test suitability of these items.
- 4443 Pretreatments - Select best bioscavenger candidate(s) for nerve agents based on comparison of performance in decision tree network and other differentiating studies.
- 1796 Therapeutic - Select best countermeasure to novel threats based on comparison of performance in decision tree network and other differentiating studies.
- 2520 Therapeutics - Select best countermeasure to vesicants based on comparison of performance in decision tree network and other differentiating studies. Conduct safety and efficacy studies in higher animal species as part of concept exploration phase.

Total 10365

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
4 - Demonstration and Validation

PE NUMBER AND TITLE
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	61409	68502	83800	69494	74465	72511	53289	Continuing	Continuing
BJ4	BIOLOGICAL DEFENSE (DEMVAL)	1832	16160	6612	10562	15440	20383	11627	Continuing	Continuing
CA4	CONTAMINATION AVOIDANCE (DEMVAL)	0	4058	6891	8680	9120	0	0	0	28749
CP4	COUNTERPROLIFERATION SUPPORT (DEMVAL)	41461	14614	14147	13539	18180	18103	13187	Continuing	Continuing
DE4	DECONTAMINATION SYSTEMS (DEMVAL)	4257	5960	7025	3146	0	7317	7112	Continuing	Continuing
IP4	INDIVIDUAL PROTECTION (DEMVAL)	3534	6595	17270	0	0	0	0	0	27399
MB4	MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	8464	18398	29694	31691	29873	24860	19465	Continuing	Continuing
MC4	MEDICAL CHEMICAL DEFENSE (DEMVAL)	1861	2717	2161	1876	1852	1848	1898	Continuing	Continuing

A. Mission Description and Budget Item Justification: Operational forces have an immediate need to safely operate, survive, and sustain operations in a chemical and biological (CB) agent threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high-risk missions. This program element supports the Program Definition and Risk Reduction (PDRR) of CB defensive equipment, both medical and non-medical, and addresses various shortcomings identified in CONDUCT OF THE PERSIAN GULF WAR: Final Report to Congress, April 1992. These projects have been restructured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, force protection (individual and collective), decontamination, and medical countermeasures. This program is enhanced using Counterproliferation Support Program funding. PDRR is conducted for: an array of chemical/biological/toxin detection and warning systems to include the Joint Service Warning and Identification Light Detection And Ranging (LIDAR) Detector (JSWILD); decontamination capabilities to include the sorbent technology, the Joint Service Fixed Site Decontamination (JSFXD) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs; and transition of biological detection components (major thrusts include: (1) early warning; (2) collector concentrators; (3) generic detection; and (4) improved reagents) for the future Joint Biological Point Detection System (JBPDS) Block II and legacy system upgrades. In the medical CB defense area, PDRR is conducted for improved medical equipment, vaccines, and drugs essential to counteracting lethal and human performance degrading effects of chemical and biological agent threats. Specific items include improvements to nerve agent antidotes, topical skin protectants, anticonvulsants, biological agent diagnostics, and vaccines to protect against various Biological Warfare (BW) agents. This Program Element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include program definition and risk reduction in the area of chemical/biological defense equipment and is correctly placed in Budget Activity 4.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

B. Program Change Summary:	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/FY 2001)	60227	62033	89510
Appropriated Value	60227	69033	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-1002		
c. Omnibus or Other Above Threshold Reductions	-488	-138	
d. Below Threshold Reprogramming	2672	-20	
e. Rescissions		-373	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			-5710
Current Budget Submit (FY2001/PRES BUD)	61409	68502	83800

Change Summary Explanation:

Funding: FY00 - Congressional Adjustments - BJ4 (1500) for biological adhesion program; CA4 (4000) for NBC Recon System training suite; DE4 (1500) for electrostatic decontamination technologies.

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
4 - Demonstration and Validation

PE NUMBER AND TITLE
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)

PROJECT
BJ4

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
BJ4	BIOLOGICAL DEFENSE (DEMVAL)	1832	16160	6612	10562	15440	20383	11627	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project BJ4 BIOLOGICAL DEFENSE (DEMVAL): Collection, detection and identification of biological warfare (BW) agents is one of the highest Commander in Chief/Joint Requirements Operational Capabilities (CINC/JROC) Counterproliferation priorities. The Department of Defense (DoD) Biological Defense mission area requires the detection and identification of biological threat agents to provide early warning capabilities at high value mobile and fixed site locations. Next generation biological detection systems will provide detection, identification, warning, and sample collection for verification of large area and/or point source biological attacks. This project supports the Technology Transfer of Biological Detectors (TT Bio) from the Chemical Biological (CB) Defense Program technical base and from Defense Advanced Research Project Agency (DARPA) research efforts. This program supports the program definition and risk reduction of biological detection components, (major thrusts include: (1) early warning; (2) collector concentrators; (3) generic detection; and (4) improved reagents) for the future Joint Biological Point Detection System (JBPDS) Block II and legacy system upgrades. This program also supports the Critical Reagent Program (CRP) for the development of advanced reagents for legacy (i.e. Biological Integrated Detection System (BIDS), Air Base/Port Biological Detection (Portal Shield)) and future detection systems that meet the established Office of the Joint Chiefs of Staff (OJCS) threat list. JBPDS Block II FY00 and FY01 BJ4 funding has been consolidated in the TT Bio Program. BJ4 FY00 funding presently includes the Bio Adhesion Program.

FY 1999 Accomplishments:

- 977 TT Bio (JBPDS Blk II) - Conducted concept development and design of candidate biological-suite components.
- 537 TT Bio (JBPDS Blk II) - Conducted chamber/field tests of candidate components.
- 318 TT Bio (JBPDS Blk II) - Conducted abbreviated analysis of potential biological detector components.

Total 1832

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**BJ4**

FY 2000 Planned Program:

- 1746 CRP - Begin development of advanced reagents to support the Joint Biological Point Detection System (JBPDS) Block II, and legacy system (i.e. BIDS, Air Base/Port Biological Detection (Portal Shield)) upgrades. These developments will focus on International Task Force (ITF-6B) list threats and improvements to the ITF-6A list inventory.
- 4400 JBPDS - Complete Biological Agent Warning Sensor (BAWS) design and integration.
- 2650 JBPDS - Complete design study and analysis of JBPDS components.
- 2950 JBPDS - Complete component integration and ruggedization.
- 2000 JBPDS - Complete Engineering Design Test.
- 890 TT Bio - Conduct hardware/software development, ruggedization, test and evaluation of biological detection components. Focus will be on JBPDS Block II candidate components and legacy system upgrades, which will improve detection time and reduce operating consumables (e.g. Time of Flight Mass Spec/Mass Spec (TOF MS/MS), Ultraviolet (UV) Triggers).
- 1464 Biological Adhesion - Exploitation of emerging biological adhesion technology across the range of required medical applications (diagnostics, preventive measures and therapeutics).
- 60 SBIR/STTR.

Total 16160

FY 2001 Planned Program:

- 3000 TT Bio - Continue hardware/software development, ruggedization, test and evaluation of biological detection components. Focus will be on JBPDS Block II candidate components and legacy system upgrades, which will improve detection time and reduce operating consumables (e.g. Time of Flight Mass Spec/Mass Spec (TOF MS/MS), Ultraviolet (UV) Triggers).
- 1653 TT Bio - Initiate development of additional selected detection components. Focus will be on lightweight early warning components for the Joint Biological Early Warning System (JBREWS) and the Joint Services Biological Standoff Detection System (JSBSDS).
- 500 TT Bio - Continue development of reagents against ITF-6B priority targets.
- 1459 TT Bio - Conduct Joint Field Trials at Dugway Proving Ground to evaluate potential biological detection technology transition candidates.

Total 6612

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **BJ4**

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	41461	14614	14147	13539	18180	18103	13187	0	133231
BJ5 BIOLOGICAL DEFENSE (EMD)	32924	14912	6005	46734	60265	15657	1504	36276	Cont
CP5 COUNTERPROLIFERATION SUPPORT (EMD)	0	5589	0	0	0	0	0	0	5589
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	22614	53596	61689	91533	59415	46167	0	335014
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	1735	2412	1911	1914	2007	1849	1903	2257	Cont

C. Acquisition Strategy:

TT Bio

This program will ensure design maturity of the most promising advanced biological detection components (major thrusts include: (1) early warning; (2) collector concentrators; (3) generic detection; and (4) improved reagents) for technology insertion and transition into the Joint Biological Point Detection System (JBPDS) Block II; the Joint Biological Remote Early Warning System (JBREWS), the Joint Services Biological Standoff Detection System (JSBSDS) Engineering Manufacturing Development (EMD), and other fielded legacy systems. This program will utilize a combination of government agencies: (1) Soldier Biological Chemical Command (SBCCOM); (2) U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID); (3) Naval Medical Research Center (NMRC); and (4) contractors to develop new reagents (immuno assay/nucleic acid) for the detection of high threat BW agents.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **BJ4**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CRP																												
ITF-6A List Complete						X																						
Antibodies Against 20 BW Agents										X																		
ITF-6B List Complete																				X								
JBPDS																												
Perform EDT				X	X		X		X																			
Perform PPQT								X																				
Perform IOT&E												X																
Block I Milestone III													X															
JBPDSBLK2																												
Concept Development/Hardware Exploration	X	X	X	X																								
TT Bio																												
Joint Field Trials (JFT 7)												X																
Transition Block II Components												X																
Joint Field Trials (JFT 8)																X												
Trans Early Warning JBREWS/JSBSDS EMD																X												
Joint Field Trials (JFT 9)																				X								
Joint Field Trials (JFT 10)																								X				
Joint Field Trials (JFT 11)																												X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**BJ4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	211	4589	800
Contractor Hardware Development	1000	8150	2200
Development Test and Evaluation	0	2450	1959
Government Engineering Support	281	0	500
Government Hardware Development	19	411	600
Government Software Development	0	160	0
Program Management/Management Support	121	150	253
SBIR/STTR	0	60	0
Technical data/documentation	200	190	300
Total	1832	16160	6612

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CA4**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CA4	CONTAMINATION AVOIDANCE (DEMVAL)	0	4058	6891	8680	9120	0	0	0	28749

A. Mission Description and Budget Item Justification:

Project CA4 CONTAMINATION AVOIDANCE (DEMVAL): This project conducts Program Definition and Risk Reduction (PDRR) of reconnaissance, detection, and identification equipment. Items of equipment in this project are: (1) the Nuclear, Biological and Chemical Reconnaissance System (NBCRS) Training System and (2) the Joint Service Warning and Identification Light Detection And Ranging (LIDAR) Detector (JSWILD). The NBCRS Training System will operate on virtual terrain and simulate Nuclear, Biological and Chemical threat to allow integrated training of NBCRS (Fox) crews. JSWILD will be a real time, modular, standoff detection system employing a mix of active and passive detection technologies for chemical detection at ranges on the order of 20 kilometers (km). An eye safe LIDAR technology will be employed for the active component and passive imaging or spectroscopic detection will be used for the passive component.

FY 1999 Accomplishments: None

FY 2000 Planned Program:

- 300 NBCRS BLK I (Training System) - Develop interface with Fort Hood Simulation.
- 3599 NBCRS BLK I (Training System) - Fabricate two NBCRS Fox training systems.
- 100 NBCRS BLK I (Training System) - Test NBCRS Fox training systems.
- 59 SBIR/STTR.

Total 4058

FY 2001 Planned Program:

- 1033 JSWILD - Perform program planning and execution of project management functions. Prepare for and develop MS I program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CA4**

FY 2001 Planned Program (Cont):

- 2858 JSWILD - Conduct studies to validate technology alternatives. Contract preparation and Request For Proposal (RFP) release for prototype development contract award in FY02.
- 1000 JSWILD - Develop technical data, task planning, logistic documentation and deploy a document library and information network for all data, research, and other program information.
- 2000 JSWILD - Analyze and translate Operational Requirements Document; Complete Analysis of Alternatives; Develop draft performance specification; Finalize Milestone I documentation; Obtain Milestone I approval.

Total 6891

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
CA5 CONTAMINATION AVOIDANCE (EMD)	43893	58733	54289	25798	9771	21365	21097	29619	Cont
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	10107	8939	9035	11660	10602	12200	12260	16000	Cont
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	0	27186	27941	25850	25977	26000	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	29437	36923	49356	496	99	0	0	0	116311
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	25873	24716	31552	6316	5526	34283	35406	35000	Cont
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	60702	97614	66953	60520	69609	71835	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	8078	11421	7406	9195	8592	5741	1512	0	51945
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	0	0	3134	9000	19147	28858	40000	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**CA4**

C. Acquisition Strategy:

NBCRS BLK I — (Training System) Task order to ITT Industries to develop and deliver two NBCRS (Fox) Trainers to Fort Hood. Trainers operate on virtual terrain and simulate Nuclear, Biological and Chemical threat to allow integrated training of NBCRS (Fox) crews.

JSWILD — Conduct Analysis of Alternatives, develop performance specification. Award competitive contract to develop and manufacture prototypes for developmental and operational testing leading to Milestone III approval with a competitive production contract award in FY07.

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSWILD																												
Concept Exploration					X	X	X	X	X	X	X																	
Conduct Analysis of Alternatives									X	X	X																	
Milestone I												X																
Award DEMVAL contract (prototype)													X	X	X	X	X	X	X	X								
Milestone II																					X							
Award EMD Option																						X	X	X	X	X	X	X
NBCRSBLK1																												
FY00 Fox Trainer Development Task Order						X	X	X																				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CA4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	0	0	1900
Contractor Hardware Development	0	2586	0
Contractor Software Development	0	963	0
Government Engineering Support	0	0	2000
Government Hardware Development	0	50	958
Operational Test and Evaluation	0	100	0
Program Management/Management Support	0	300	1033
SBIR/STTR	0	59	0
Technical data/documentation	0	0	1000
Total	0	4058	6891

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
4 - Demonstration and Validation

PE NUMBER AND TITLE
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)

PROJECT
CP4

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CP4	COUNTERPROLIFERATION SUPPORT (DEMVAL)	41461	14614	14147	13539	18180	18103	13187	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL): Providing full dimensional protection to deployed forces and critical fixed sites, to include Aerial Ports of Debarkation (APODs) and Sea Ports of Debarkation (SPODS), under threat of chemical or biological attack is one of the highest Commanders-in-Chief (CINC) priorities. Joint Vision 2010 states that power projection from the U.S. - achieved through rapid strategic mobility and enabled by overseas presence - will likely remain the fundamental concept of our future force. Fixed installations (seaports, aerial ports, logistics nodes, etc.) are critical to this mode of operation and are especially vulnerable to attack with Chemical and Biological (CB) weapons. Future adversaries will likely use CB weapons to deny U.S. and Allied use of these facilities. U.S. forces, both mobile and at fixed sites, must be able to survive CB attacks and quickly recover to continue operations. This project supports the accelerated fielding of operational capabilities (technology, Concept of Operations (CONOPS), and automation tools) to CINCs through the Advanced Concept Technology Demonstration (ACTD) process. This project also funds the development of the Long Range Biological Standoff Detector System (LR-BSDS).

The Joint Biological Remote Early Warning System (JBREWS) ACTD addresses the need for an early warning, detection and identification of Biological Warfare (BW) agents at fixed sites. The objectives of this ACTD are to 1) Evaluate military utility of Remote Early Warning for BW agent attacks; 2) Provide the sponsoring CINC an interim residual capability to detect, identify and warn forces who may be exposed to BW agents; and 3) Develop CONOPS and refine tactics techniques and procedures. The JBREWS technology residual will be a system of distributed BW agent sensors with a remote capability and will be compatible with legacy BW detection systems.

The Restoration of Operations (RestOps) ACTD investigates the impact of technology and CONOPS on restoring operating tempo at a port or airfield following a CB attack. RestOps are those pre/during/post attack actions necessary to protect against and then immediately react to the consequences of a CB attack on a port or airfield so that the facility can resume functioning with a minimum of down time. This ACTD will provide technology, software support, and techniques and procedures so that a base commander can minimize the impact of a CB attack on military operations. The ACTD objectives are: 1) Integrate and demonstrate mature technologies and tools used for the restoration of operations at an airfield that has been attacked with either chemical or biological weapons; 2) Develop, improve, and integrate the CONOPS for executing RestOps contingencies; 3) Develop automated planning tools that allow a CINC's staff to plan and prepare for, and react to, CB attacks at critical fixed sites; and 4) Identify shortfalls and suggest improvements to current U.S. Policy for CONUS and OCONUS RestOps contingencies.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**CP4**

FY 1999 Accomplishments:

- 4935 JBREWS ACTD - Completed system design and conducted critical design review.
- 2950 JBREWS ACTD - Continued algorithm and software development.
- 1960 JBREWS ACTD - Started chamber tests of JBREWS ACTD components and subsystems.
- 3000 JBREWS ACTD - Started preparations to conduct demonstration.
- 13700 JBREWS ACTD - Started fabrication of system leave-behinds for the European Command (EUCOM) area of operations. Leave behinds include: 32 wet samplers (Sample Identification Units); an open communication architecture consisting of 132 radios and related items; 18 sensor network command posts; and 1 standoff biological detector/discriminator.
- 1111 JBREWS ACTD - Continued development and prove-outs of CONOPS/Doctrine.
- 2950 JBREWS ACTD - Continued coding and simulation system development.
- 2632 LR-BSDS - Completed fabrication of first two systems.
- 2700 LR-BSDS - Conducted developmental testing.
- 1480 LR-BSDS - Conducted customer demonstration.
- 1683 LR-BSDS - Completed retrofit/refurbishment.
- 2360 LR-BSDS - Continued fabrication of Initial Operational Test and Evaluation (IOT&E) systems.

Total 41461

FY 2000 Planned Program:

- 4280 JBREWS ACTD - Complete Hardware/Software development and Live Agent Chamber Test.
- 200 JBREWS ACTD - Complete fabrication of ACTD residuals.
- 900 RestOps ACTD - Complete development of site baseline exercise scenario.
- 2800 RestOps ACTD - Conduct Joint Chemical Field Trials.
- 1200 RestOps ACTD - Complete development of site chemical and biological exercise scenario.
- 1564 RestOps ACTD - Conduct CONOPS Development and Validation.
- 3458 RestOps ACTD - Develop RestOps methodologies for technology selection analysis, chemical field test assessment, and operational capability assessment for use during RestOps and other fixed site programs.
- 212 SBIR/STTR.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**CP4**

FY 2000 Planned Program (Cont):
Total 14614

FY 2001 Planned Program:

- 4417 JBREWS ACTD - Start Government and Contractor Logistics Support (management, maintenance and parts) for JBREWS ACTD leave-behinds in EUCOM.
- 300 RestOps ACTD - Complete Joint Chemical Field Trials and technology assessments.
- 500 RestOps ACTD - Conduct Operational/Functional Testing.
- 350 RestOps ACTD - Conduct CONOPS validation.
- 5240 RestOps ACTD - Procure selected decontamination, detection, plume mapping, protection, medical countermeasures, and sensor integration equipment/systems for the RestOps demonstration.
- 1400 RestOps ACTD - Develop and Conduct Preliminary Demonstration.
- 1940 RestOps ACTD - Refine the methodology for operational capability assessment, initiate planning for RestOps technology transition, develop sensor integration software, and conduct In Process Reviews for the ACTD.

Total 14147

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CP4**

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
CP3 COUNTERPROLIFERATION SUPPORT (Adv Tech Dev)	7098	10434	10213	11416	7321	7663	13345	29183	Cont
BJ4 BIOLOGICAL DEFENSE (DEMVAL)	1832	16160	6612	10562	15440	20383	11627	2353	Cont
BJ5 BIOLOGICAL DEFENSE (EMD)	32924	14912	6005	46734	60265	15657	1504	36276	Cont
CP5 COUNTERPROLIFERATION SUPPORT (EMD)	0	5589	0	0	0	0	0	0	5589
JPO200 JT BIO REM EARLY WARNING SYS (JBREWS)	0	0	0	0	0	34251	36023	25000	Cont
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	1735	2412	1911	1914	2007	1849	1903	2257	Cont
JPO220 LONG RANGE BIO STANDOFF DET SYS (LRBSDS)	0	1907	11733	11799	0	0	0	0	25439
JPO230 PORTAL SHIELD EQUIPMENT	14564	3877	24746	3868	0	0	0	0	47055

C. Acquisition Strategy:

ACTDs — Utilize non-traditional acquisition Advanced Concept Technology Demonstration (ACTD) to rapidly provide the CINC with operational capabilities to counter battlefield effects of chemical and biological attacks, to include the development of concepts of operation and doctrine associated with biological remote early warning and restoration of operations at fixed sites.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CP4**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBREWS																												
Conduct Critical Design Review			X																									
Fabricate Functional Prototypes				X																								
Standoff - Detection Discrimination Test				X																								
Conduct JBREWS ACTD Demonstration							X																					
JBREWS ACTD - Fielding Support (CLS)									X	X	X	X	X	X	X	X												
Conduct Milestone II											X																	
LRBSDS																												
LR-BSDS Fabrication	X	X	X	X																								
CP Engineering Development Tests			X																									
Conducted Customer Demonstration				X																								
RESTOPS																												
Scenario/Exercise Development						X	X	X	X	X	X	X	X	X														
Joint Chemical Field Trials							X	X																				
Functional Test							X	X	X	X	X	X	X	X														
Baseline Exercise									X																			
CONOPS Development									X	X																		
Preliminary Demonstration												X																
CONOPS Validation													X	X														
JWE/Final Demonstration																X												
Fielding Support (CLS)																	X	X	X	X	X	X	X	X				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **CP4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	3121	669	953
Contractor Hardware Development	12977	0	0
Contractor ILS Support	146	689	1951
Contractor Software Development	2000	0	0
Development Test and Evaluation	7975	3803	230
Government Engineering Support	5021	1522	582
Government Hardware Development	3118	200	5376
Government ILS Support	372	72	126
Government Software Development	4503	253	76
Operational Test and Evaluation	0	3663	2200
Program Management/Management Support	259	2559	2200
SBIR/STTR	0	212	0
Technical data/documentation	1969	972	453
Total	41461	14614	14147

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
4 - Demonstration and Validation

PE NUMBER AND TITLE
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)

PROJECT
DE4

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DE4	DECONTAMINATION SYSTEMS (DEMVAL)	4257	5960	7025	3146	0	7317	7112	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DE4 DECONTAMINATION SYSTEMS (DEMVAL): This project funds Program Definition and Risk Reduction (PDRR) of decontamination systems utilizing solutions that will remove and detoxify contaminated material without damaging combat equipment, personnel, or the environment. Decontamination systems provide a force restoration capability for units that become contaminated. Development efforts will provide systems with reduced operational impact, reduced logistics burden, reduced cost, increased safety, and minimized environmental effect over currently fielded decontaminants. Funding supports the Sorbent Program, the Joint Service Fixed Site Decontamination (JSFXD), and the Joint Service Sensitive Equipment Decontamination (JSSED).

Sorbent Program provides a reactive sorbent powder technology and a family of applicators for immediate decontamination. Sorbent will replace the XE555 resin in the M295 Decontamination Kit for wipedown procedures. The sorbent and a dispenser system will replace the M11, M13 and associated Decontaminating Solution 2 (DS2) in operator spraydown procedures. The Sorbent Program will be more reactive towards Chemical Warfare (CW) agents than the M295 Kit, therefore, reducing the hazard associated with the spent decontaminant. The sorbent will be more compatible with Mission Oriented Protective Posture (MOPP) and other materials than the currently fielded DS2.

The JSSED system will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment, vehicle/aircraft interiors, and associated cargo, as defined in the draft Joint Service Operational Requirements Document for the JSSED. The JSSED will be a dual technology development program; one technology to decontaminate sensitive items/equipment and a second technology to decontaminate vehicle/aircraft interiors.

The JSFXD program consists of a family of decontaminants and family of applicators that provide each service with the capability to decontaminant fixed site to restored mission operations. The program is divided into three blocks. Block I will field decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators required to provide the full fixed site decontamination capability (excluding Block III). Block III will provide applicators for skin/casualties with open wounds. These items will be used to decontaminant equipment, personnel and vital areas to sustain critical cargo flow and operation tempo at ports, airfields, logistic nodes and key command and control centers.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **4 - Demonstration and Validation**	PE NUMBER AND TITLE **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**
	PROJECT **DE4**

FY 1999 Accomplishments:

- 1040 Sorbent - Built Engineering, Design and Test (EDT), Production Qualification Test (PQT), and Initial Operational Test (IOT) hardware for operator's wipe down.
- 1033 Sorbent - Fabricated candidate applicators for operator's wipe down.
- 433 Sorbent - Executed engineering change proposal for adoption of the sorbent into the M295 Personnel Equipment Decontamination Kit.
- 200 Sorbent - Conducted in-process review for adoption of the sorbent as a standard military decontaminant.
- 200 Sorbent - Completed EDT for M295 personnel equipment decontamination kit.
- 1351 Sorbent - Conducted MS II/III for personnel equipment wipe down and operator's spray down.

Total 4257

FY 2000 Planned Program:

- 348 JSFXD - Conduct technology definition and assessment of Commercial-Off-The-Shelf (COTS)/Non-Developmental Items (NDI's) Decontamination equipment and decontaminants for Block III.
- 182 JSFXD - Prepare MS I documentation for selected candidate equipment for Block II.
- 972 JSFXD (TT DECON) - Conduct technology definition and assessment on a wide range of development technology to include electrostatic decontamination technologies to neutralize chemical and biological warfare agent threats to personnel, equipment, buildings and agricultural produce; technologies to neutralize drifting chemical and biological aerosols; technologies that are environmental friendly and technology methodology mitigate chemical and biological contamination resulting from window blast and flying shards of glass.
- 1309 Sorbent - To develop and support Milestone (MS) III documentation for operator spray down systems.
- 800 Sorbent - Develop Technical Data Package (TDP) for operator spray down systems.
- 800 Sorbent - Build EDT hardware for operator spray down systems.
- 770 Sorbent - Initiate Integrated Logistic Support (ILS) program for operator spray down systems.
- 663 Sorbent - Conduct producibility studies for operator spray down systems.
- 116 SBIR/STTR.

Total 5960

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**DE4**

FY 2001 Planned Program:

- 1047 JSFXD - Procure and test prototype decontaminants to meet the casualty decontamination requirements.
- 563 JSFXD - Complete technical documentation (Specifications, Test Reports and Test Plans).
- 187 JSFXD - Prepare MS II documentation.
- 969 JSFXD - Begin testing of casualty decontaminants to support FDA approval.
- 150 JSFXD - Prepare documentation for MS I/II for Block I and Block III.
- 250 JSSED - Block I Milestone I preparation and coordination with JSIG and JSMG.
- 1934 JSSED - Block I Competitive Prototype Contract and Contracting Support.
- 434 JSSED - Initial evaluation of competitive prototypes.
- 250 Sorbent - Develop end item design using carbon cloth technology to facilitate absorption of the contaminant from the skin.
- 50 Sorbent - Produce prototype hardware of the M291skin decontamination kits with sorbent.
- 150 Sorbent - Conduct toxicity testing of sorbent for skin decontamination.
- 791 Sorbent - Conduct EDT/IOT for skin decontamination system.
- 250 Sorbent - Develop engineering change proposal to incorporate sorbent into the M291 skin decontamination kit.

Total 7025

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
DE5 DECONTAMINATION SYSTEMS (EMD)	1355	3764	3611	7279	15393	11825	11475	8000	Cont
G47001 MODULAR DECON SYSTEM	5950	7562	9430	9771	9532	95	0	0	42340
JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)	0	0	0	1516	1998	7505	6615	0	17634
JN0016 JOINT SERVICE SENSITIVE EQUIPMENT DECON	0	0	0	0	0	3110	4822	6090	Cont
JN0018 SORBENT DECON	0	1493	2765	4779	4799	0	0	0	13836

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **DE4**

C. Acquisition Strategy:

Sorbent — In-house/contractor development and testing. Competitive Contractor manufacture of production units.

JSSED — In-house/contractor design and prototype development and fabrication for in-house and contractor testing. Contractor manufacture of production units.

JSFXD — This project Program Definition and Risk Reduction (PDRR) of decontamination equipment for Joint Service Fixed Site Decontamination (JSFXD) Program. The program objective consists of a family of decontaminants and family of applicators that provide each service with the capability to decontaminate fixed site to restored mission operations. The program is divided into three blocks. Block I will field decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators required to provide the full fixed site decontamination capability (excluding Block III). Block III will provide applicators for skin/casualties with open wounds. These items will be used to decontaminate equipment, personnel and vital areas to sustain critical cargo flow and operation tempo at ports, airfields, logistic nodes and key command and control centers.

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSFXD																												
Block I MS I/II								X																				
Block II MS I								X																				
Block II Prototype Testing									X	X	X																	
Block II MS II											X																	
Block II MS III																			X									
Block III MS I/II												X																
Block III Milestone III																							X					
JSSED																												
Phase I Milestone I									X																			
Evaluate Candidate Phase I Prototypes										X	X	X																
Down-select Phase I Prototype													X															
SORBDECON																												
ECP for M295			X																									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **DE4**

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SORBDECON (Cont)																												
Select Applicator for Spraydown			X																									
Milestone III for XM24 SDS								X																				
Develop Carbon Cloth System									X	X	X	X																
Production Contract Award										X																		
FUE/IOC										X	X	X	X	X	X	X												
Milestone III for Carbon Cloth															X													

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**DE4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	125	400	1190
Contractor Hardware Development	1351	0	1984
Contractor ILS Support	0	270	50
Development Test and Evaluation	200	2968	2144
Government Engineering Support	525	489	100
Government ILS Support	248	500	50
Operational Test and Evaluation	950	0	125
Program Management/Management Support	425	802	450
SBIR/STTR	0	116	0
Technical data/documentation	433	415	932
Total	4257	5960	7025

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **IP4**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
IP4	INDIVIDUAL PROTECTION (DEMVAL)	3534	6595	17270	0	0	0	0	0	27399

A. Mission Description and Budget Item Justification:

Project IP4 INDIVIDUAL PROTECTION (DEMVAL): This project funds Program Definition and Risk Reduction (PDRR) of individual protection equipment aimed at improving current protection levels while reducing physiological and logistical burdens. The goal is to provide equipment which allows the individual soldier, sailor, airman, or marine to operate in a contaminated Chemical and Biological (CB) environment with no or minimal degradation to his/her performance. This project includes the Joint Service General Purpose Mask (JSGPM) and the Joint Service Aviation Mask (JSAM). The JSGPM will reduce weight, bulk and breathing resistance by as much as 50 percent. The JSGPM will also improve vision coupling, communication effectiveness, and comfort/wearability. The mask will significantly reduce total ownership cost/life cycle cost. The JSGPM will be low maintenance and cost to be classified as disposable/replaceable after decontamination. JSAM will provide rotary and fixed wing aircrew members with above-the-shoulder CB protection and simultaneous acceleration protection in high performance aircraft. JSAM will integrate with existing aircrew life support systems equipment and support equipment.

FY 1999 Accomplishments:

- 1100 JSGPM - Finalized Performance Specification, Request For Proposal and established comprehensive equipment interface.
- 999 JSGPM - Prepared and evaluated solicitation for Baseline Program Definition and Risk Reduction Contract and options.
- 935 JSGPM - Prepared program documentation to include Test and Evaluation Master Plan and Simulation Support Plan.
- 500 JSGPM - Established Developmental Test and Evaluation baseline testing program to include investigation of test methodologies and techniques and comparison with current foreign military masks.

Total 3534

FY 2000 Planned Program:

- 1260 JSGPM - Conduct Joint Program/Project Management.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**IP4**

FY 2000 Planned Program (Cont):

- 3888 JSGPM - Award Program Definition and Risk Reduction contract for mask design and 250 prototypes.
- 611 JSGPM - Continue preparation of Program/Project Documentation.
- 500 JSGPM - Continue Developmental Test and Evaluation.
- 240 JSGPM - Conduct sustainment study to investigate prime vendor/direct vendor delivery/Contractor Logistics Support.
- 96 SBIR/STTR.

Total 6595

FY 2001 Planned Program:

- 989 JSAM - Test planning working group activities including responsible test organization support and preparation for prototype evaluation.
- 1253 JSAM - Perform program planning and execution of project management functions. Prepare for and develop program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.
- 4205 JSAM - Continue two contractor prototype development, data delivery, and contractor development test. Begin prototype fabrication of approximately 20 masks.
- 1623 JSAM - Contractor Program Management/Systems Engineering and development of engineering change orders.
- 1100 JSGPM - Continue Joint Program/Project Management.
- 1066 JSGPM - Continue preparation of Program/Project Documentation.
- 5534 JSGPM - Continue development contract for mask design and fabrication of prototypes and award Engineering Manufacturing & Development option.
- 1100 JSGPM - Continue Developmental Test and Evaluation.
- 400 JSGPM - Continue sustainment study for logistics support.

Total 17270

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**IP4**

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
IP5 INDIVIDUAL PROTECTION (EMD)	7485	10053	3819	20009	19902	21785	0	0	83053
JA0002 JT SVC AVIATION MASK (JSAM)	0	0	0	0	0	7154	14833	11000	Cont
JA0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	0	0	0	0	0	0	15822	18953	Cont
JN0011 AERP AIRCRAFT MODS	4059	1880	887	1254	948	0	0	0	9028
MA0400 PROTECTIVE CLOTHING	80345	95055	96475	89493	86844	87319	87967	0	623498

C. Acquisition Strategy:

JSGPM — The Acquisition Strategy outlines the strategy for a combined full scale development (Program Definition and Risk Reduction and Engineering and Manufacturing Development) and production. The contract for development/production is based on a joint service performance specification with special emphasis on the lowest total ownership cost.

JSAM — The Acquisition Strategy outlines the strategy for a combined full scale development (Program Definition and Risk Reduction and Engineering and Manufacturing Development). The contract for development is based on a joint service systems requirement document with special emphasis on meeting an average unit production price. The strategy also provides for contractor commitment to a production price commitment curve for production. Note: In FY00 the JSAM program is currently funded in engineering and manufacturing development (budget activity 5).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **IP4**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JPACE																												
Manufacture Prototypes for OT											X	X	X															
JSAM																												
RFP Development					X	X																						
Source Selection							X	X																				
PDRR Phase								X	X	X	X	X	X	X	X													
Milestone II																X												
EMD Phase																X	X	X	X	X	X	X	X	X	X	X		
Milestone III																											X	
JSGPM																												
Milestone I IPR	X																											
Pre-Solicitation Conference	X																											
Second Draft RFP		X																										
AP Approved		X																										
RFP (FINAL)			X																									
Source Selection Plan			X																									
Proposals Received				X																								
Development Contract Award					X																							
Milestone II IPR												X																
Award EMD Option													X															
Milestone III/TC IPR																								X				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**IP4**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSGPM (Cont)																												
Production Contract Award																									X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**IP4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	0	2060	6554
Contractor Hardware Development	0	1589	2329
Contractor ILS Support	0	240	400
Development Test and Evaluation	500	500	2489
Government Engineering Support	1000	1000	2253
Government Hardware Development	634	0	34
Government ILS Support	300	300	300
Operational Test and Evaluation	0	0	500
Program Management/Management Support	500	500	2162
SBIR/STTR	0	96	0
Technical data/documentation	600	310	249
Total	3534	6595	17270

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **MB4**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
MB4	MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	8464	18398	29694	31691	29873	24860	19465	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL): This project funds the Program Definition and Risk Reductions (PDRR) phase, (acquisition phase I) for vaccines, drugs, and diagnostic medical devices which are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. Phase I efforts for medical biological defense product development include establishing standards and reference material for manufacturing and preliminary safety studies in animals. These data (manufacturing process development, pilot lot manufacturing and non-clinical safety/toxicology studies) are submitted in support of an Investigational New Drug (IND) application with the FDA so that human studies to evaluate product safety and immunogenicity can be conducted. Phase I efforts are expected to be accomplished in two to four plus years. At the end of phase I, the product will transition to the engineering and manufacturing development phase. Products to be developed under this program include: recombinant botulinum, next generation anthrax, plague, Q fever, ricin, smallpox, tularemia, and Venezuelan Eastern Encephalitis (VEE), combined VEE/Eastern Equine Encephalitis/Western Equine Encephalitis (VEE/EEE/WEE) vaccines.

FY 1999 Accomplishments:

- 3453 Continued phase I effort for Smallpox vaccine.
- 1547 Began phase I effort for Botulinum Pentavalent Recombinant and Venezuelan Equine Encephalitis (VEE) vaccines.
- 3464 Completed clinical product trials for Botulinum Antitoxin Heptavalent Equine. Transition to the Center for Disease Control (CDC) pending approval.

Total 8464

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**MB4**

FY 2000 Planned Program:

- 13752 Continue phase I effort for Tularemia (redirect from phase II), Botulinum, Smallpox and Venezuelan Equine Encephalitis (VEE) vaccines.
- 4235 Initiate phase I effort for Plague and Ricin vaccines.
- 411 SBIR/STTR.

Total 18398

FY 2001 Planned Program:

- 28418 Continue phase I effort for Tularemia, Smallpox, Botulinum, Venezuelan Equine Encephalitis, Plague, and Ricin vaccines.
- 876 Initiate phase I effort for combined VEE/EEE/WEE vaccine.
- 400 Initiate phase I effort for next generation Anthrax vaccine.

Total 29694

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	14635	18927	24198	57206	68991	42357	33619	39901	Cont
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	14818	48634	49795	40430	45649	60834	64031	58266	Cont

C. Acquisition Strategy: Prime systems contract for advanced development, licensure, production, and storage of biological defense vaccines.

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VACCINES																												
JVAP prime contract	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**MB4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	821	1772	2960
Development Test and Evaluation	5748	12405	20536
Pilot Lot Production (vaccines)	821	1772	2960
Program Management/Management Support	253	266	279
SBIR/STTR	0	411	0
Technical data/documentation	821	1772	2959
Total	8464	18398	29694

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **MC4**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
MC4	MEDICAL CHEMICAL DEFENSE (DEMVAL)	1861	2717	2161	1876	1852	1848	1898	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL): This project funds Program Definition and Risk Reduction (PDRR) of countermeasures for chemical agents including life support equipment, diagnostic equipment, pretreatment and therapeutic drugs, and individual/casualty decontamination compounds. A system of medical defense against chemical agents is required to provide protection, to sustain performance in a chemical environment, and to provide for self-aid and medical treatment of chemical casualties. Fielding of pretreatment and therapeutic drugs requires Food and Drug Administration (FDA) approval. Multiple long-term studies are required to obtain FDA approval resulting in longer program timelines and greater program cost than other non-pharmaceutical product programs. Efficacy testing of most candidate drugs against Chemical Warfare (CW) agents cannot be conducted in humans, therefore animal surrogate models must be developed.

FY 1999 Accomplishments:

- 835 Completed validation and testing of methemoglobin monitor to support Milestone I in FY00.
- 570 Initiated animal toxicology studies in non-human primates with cyanide pretreatments.
- 231 Completed initial performance evaluation of cyanide pretreatment in non-human primates.
- 225 Completed initial formulation evaluation of cyanide pretreatment.

Total 1861

FY 2000 Planned Program:

- 50 Conduct Milestone I in-process review on the methemoglobin monitor.
- 849 Conduct safety review and additional animal testing for cyanide pretreatment.
- 256 Initiate validation of animal efficacy model of cyanide pretreatment to support human effectiveness.
- 1423 Initiate manufacturing scale-up and process validation of cyanide pretreatment.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**MC4**

FY 2000 Planned Program (Cont):

- 50 Conduct Milestone I in-process review on advanced anticonvulsant.
- 50 Prepare and submit Investigational New Drug (IND) application for advanced anticonvulsant.
- 39 SBIR/STTR.

Total 2717

FY 2001 Planned Program:

- 250 Conduct human performance testing for cyanide pretreatment.
- 200 Initiate Phase I safety study with the advanced anticonvulsant.
- 100 Initiate a human validation study with the methemoglobin monitor.
- 811 Complete manufacturing scale-up and process validation of cyanide pretreatment.
- 400 Initiate toxicology studies with the advanced anticonvulsant.
- 400 Initiate validation of animal efficacy model of advanced anticonvulsant.

Total 2161

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
MC5 MEDICAL CHEMICAL DEFENSE (EMD)	1677	746	1091	1463	1549	1565	1612	1728	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **4 - Demonstration and Validation**

PE NUMBER AND TITLE: **0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

PROJECT: **MC4**

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MEDCHEM																												
Advanced Anticonvulsant - MS I							X																					
Advanced Anticonvulsant - MS II/III																								X				
Cyanide Pretreatment - MS II														X														
Cyanide Pretreatment - MS III																								X				
Methemoglobin Monitor - MS I							X																					
Methemoglobin Monitor - MS II/III																X												
Reactive TSP - MS I																	X											
Nerve Agent Scavenger - MS I																	X											

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Demonstration and Validation	**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**	**MC4**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Operational Test and Evaluation	1497	845	696
Program Management/Management Support	227	1806	1443
SBIR/STTR	0	39	0
Technical data/documentation	137	27	22
Total	1861	2717	2161

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	103159	118458	100815	166231	183528	119095	74497	Continuing	Continuing
BJ5	BIOLOGICAL DEFENSE (EMD)	32924	14912	6005	46734	60265	15657	1504	Continuing	Continuing
CA5	CONTAMINATION AVOIDANCE (EMD)	43893	58733	54289	25798	9771	21365	21097	Continuing	Continuing
CO5	COLLECTIVE PROTECTION (EMD)	1190	5734	7802	7742	7657	4541	5190	Continuing	Continuing
CP5	COUNTERPROLIFERATION SUPPORT (EMD)	0	5589	0	0	0	0	0	0	5589
DE5	DECONTAMINATION SYSTEMS (EMD)	1355	3764	3611	7279	15393	11825	11475	Continuing	Continuing
IP5	INDIVIDUAL PROTECTION (EMD)	7485	10053	3819	20009	19902	21785	0	0	83053
MB5	MEDICAL BIOLOGICAL DEFENSE (EMD)	14635	18927	24198	57206	68991	42357	33619	Continuing	Continuing
MC5	MEDICAL CHEMICAL DEFENSE (EMD)	1677	746	1091	1463	1549	1565	1612	Continuing	Continuing

A. Mission Description and Budget Item Justification: Operational forces have an immediate need to safely operate, survive and sustain operations in a chemical and biological agent threat environment across the continuum of global, contingency, special operations/low-intensity conflict, counternarcotics, and other high-risk missions. Operating forces have a critical need for defense against worldwide proliferation of Chemical and Biological (CB) warfare capabilities and for medical treatment of casualties in medical treatment facilities. Congress has directed centralized management of Department of Defense (DoD) CB Defense initiatives, both medical and non-medical. This program element supports the Engineering and Manufacturing Development (EMD) of CB defensive equipment, both medical and non-medical, and addresses various shortcomings identified in CONDUCT OF THE PERSIAN GULF WAR: FINAL REPORT TO CONGRESS, April 1992. These projects have been restructured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, force protection (individual and collective), decontamination and medical countermeasures. The consolidation will provide for development and operational testing of equipment for Joint Service as well as Service-unique requirements.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **5 - Engineering and Manufacturing Dev**	PE NUMBER AND TITLE **0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

Contamination avoidance efforts under this engineering and manufacturing development program will provide U.S. forces with real-time hazard assessment capabilities. They include advanced multi-agent point and remote chemical detection systems for ground, aircraft, and shipboard applications; automated warning and reporting systems; integrated radiation detection and monitoring equipment; and enhanced battlefield reconnaissance capabilities. Force protection efforts will increase protection levels while decreasing physical and psychological burdens imposed by protective equipment. They include improved aircrew respiratory protection, lightweight integrated suit technology, and shipboard collective protection equipment.

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

DoD Biological Defense mission requires the detection and identification of validated biological threat agents to provide early warning capabilities on mobile and fixed platforms. This program element will provide theater protection through the development of point and standoff detection systems. The detection system concept will provide detection, identification, warning and sample collection for verification that a biological agent attack has occurred. The Counterproliferation Support Program was funded in FY00 to complete the development of the Long Range Biological Stand-off Detection System (LR-BSDS) for Initial Operational Test and Evaluation (IOT&E) prior to production. This program element also provides for the development of biological defense medical programs. DoD Biological Defense medical mission will address: (1) protective vaccines - vaccination capability against the most probable biological threat agents; (2) identification - clinical identification of biological threat agents through medical evaluation and laboratory analysis to augment early warning capabilities.

The projects in this Program Element support research efforts in the engineering and manufacturing development phase of the acquisition process and are therefore correctly placed in Budget Activity 5.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

B. Program Change Summary:	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/FY 2001)	110943	116365	100296
Appropriated Value	124943	119365	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-1832		
c. Omnibus or Other Above Threshold Reductions	-18431	-739	
d. Below Threshold Reprogramming	-1521	245	
e. Rescissions		-413	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			519
Current Budget Submit (FY2001/PRES BUD)	103159	118458	100815

Change Summary Explanation:

Funding: FY99 - SBIR (-1832). FY99 - Above Threshold - BJ5 (-14000) reprogramming to Defense Wide Procurement for Airbase Port Bio Detection (Portal Shield) equipment; IP5 (-3534) moved to IP4 for the Joint Service General Purpose Mask (JSGPM); (-897) for revised economic assumptions. FY99 - Below Threshold - (-1099) moved to higher priority programs; CA5 (1300) for Automatic Chemical Agent Detector and Alarm (ACADA) and Joint Chemical Agent Detector (JCAD) RDTE; DE5 (-2422) moved to CB3 for Joint Fixed Site Decon; IP5 (700) for Joint Service Lightweight Suit Technology (JSLIST).

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **BJ5**

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
BJ5 BIOLOGICAL DEFENSE (EMD)	32924	14912	6005	46734	60265	15657	1504	Continuing	Continuing

A. Mission Description and Budget Item Justification:

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

The Joint Biological Point Detection System (JBPDS) program is an integration of the Army Biological Integrated Detection System (BIDS), Navy Interim Biological Agent Detector (IBAD) and Air Force and Marine Corps Service-specific development programs. The common detection suite will meet the Service requirements as outlined in the Joint Operational Requirements Document (JORD). The suite will be capable of identifying, within 15 minutes, as a minimum, Biological Warfare (BW) agents listed in Category A of International Task Force (ITF) 6 Report, dated 9 Feb 90. The suite will be integrated into each Service's platform (e.g. High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), ship, truck, etc.) or airbase or port to provide a common detection capability with joint interoperability and supportability. The JBPDS will: increase the number of agents that can be identified by the BIDS and IBAD systems; provide automated, knowledge-based, near real-time identification; and provide a first time point detection capability to the Air Force and Marine Corps. An evolutionary component/suite upgrade acquisition approach will be used to provide the Services with a common point detection capability. The program is structured into two Block Engineering & Manufacturing Development (EMD) phases. Block I EMD will provide the Services with an automated BW agent identification capability. Block II will upgrade the Block I production suites to more fully comply with the JORD requirements by taking advantage of a robust and mature technical base.

This project includes the completion of installation of IBAD rapid prototypes aboard naval ships in FY99 and their continued operational support. IBAD gives the Navy an interim point detection capability aboard ships at sea, which will be part of the theater protection strategy. The JBPDS will replace the IBAD beginning in FY02.

This project also supports the Air Base/Port Biological Detection (Portal Shield) System with Contractor Logistics Support (CLS), spares/repairs of network detection sensors, and an upgrade to the sampling system at four sites in the Central Command/Pacific Command (CENTCOM/PACOM) Area of Responsibility (AOR).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**BJ5**

The Critical Reagent Program (CRP) will integrate and consolidate all Department of Defense (DoD) reagents/antibodies/DNA biological detection requirements in demonstration/validation through production). CRP will ensure the availability of high-quality reagents throughout the life-cycle of all Biological Warfare (BW) detection/identification systems. This project supports all aspects of manufacturing "SCALE-UP" of developmental protocols for Critical Reagent Program-developed products.

FY 1999 Accomplishments:

- 1440 Air Base/Port Biological Detection (Portal Shield) Advanced Concept Technology Demonstration (ACTD) - Provided contractor logistics support and fielding at Central Command/U.S. Forces Korea (CENTCOM/USFK) Air Base/Port Biological Detection (Portal Shield) sites.
- 2170 CRP - Developed five new antibody-based reagents to support the development of the Airbase/Port Biological Detection (Portal Shield) and Joint Biological Point Detection System (JBPDS) Block I.
- 1659 CRP - Completed fabrication of prototype hand-held assays to support development of identification technologies for the Airbase/Port Biological Detection (Portal Shield) ACTD and the Joint Biological Point Detection System (JBPDS) Block I.
- 221 IBAD - Continued support of rapid prototype systems, continued installation on Naval ships, and investigated aerosol background of Naval areas of operations.
- 533 JBPDS - Initiated Pre-Production Qualification Testing (PPQT) and Initial Operational Test & Evaluation (IOT&E) planning.
- 2870 JBPDS - Completed software integration and acceptance testing.
- 850 JBPDS - Completed Engineering Design Test (EDT) Safety Assessment and Human Factors Testing.
- 1455 JBPDS - Completed first draft operator manual and PPQT training packages.
- 2311 JBPDS - Completed Phase I EDT modifications and design change documentation of Block I System components.
- 1550 JBPDS - Developed and input technical data on EDT systems into the provisioning database.
- 1950 JBPDS - Completed Phase I EDT and eight prototype systems.
- 480 JBPDS - Completed system integration for United States Navy (USN) shipboard configurations.
- 1950 JBPDS - Completed initial Logistic Support Analysis (LSA) task analyses and Reliability Availability Maintainability (RAM) analysis.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**BJ5**

FY 1999 Accomplishments (Cont):

- 1600 JBPDS - Completed system integration for and fabrication of US Air Force fixed-site and United States Marine Corps (USMC) man-portable environmental control units.
- 3995 JBPDS - Completed system integration for fabrication of eight Block I biological detection shelter systems.
- 7890 JBPDS - Completed fabrication and 90% integration of 17 PPQT Block I biological suites in shipboard, fixed-site, shelter and man-portable configurations.

Total 32924

FY 2000 Planned Program:

- 2017 Air Base/Port Biological Detection (Portal Shield) - Provide contractor logistics support of installed ACTD detector networks in Central Command/Pacific Command (CENTCOM/PACOM) Areas of Operations (AO).
- 431 Air Base/Port Biological Detection (Portal Shield) - Provide depot repairs and spares for detector networks in CENTCOM/PACOM AO.
- 320 Air Base/Port Biological Detection (Portal Shield) - Initiate upgrades to trigger and sampling components.
- 726 CRP - Transition newly-developed reagent protocols to full-scale production. Transition newly developed Hand-Held Assays (HHAs) to production.
- 500 CRP - Support operation and maintenance of reagent repository and reagent validation.
- 340 IBAD - Continue material support of rapid prototype systems and investigation of aerosol background.
- 1752 JBPDS - Complete Pre-Production Qualification Testing (PPQT).
- 3145 JBPDS - Complete Logistic Support Analysis Records, Provisioning DataBase, Technical Manuals, Drawings and Performance Specifications.
- 909 JBPDS - Complete procurement planning, solicitation and award documentation for Block I production contract.
- 750 JBPDS - Conduct annual Joint Field Trial at Dugway Proving Ground.
- 2357 JBPDS - Conduct JPBDS Block I IOT&E.
- 800 JBPDS - Complete early user assessment and operational evaluation.
- 700 JBPDS - Complete PPQT for USN shipboard, USN and USAF fixed site, USMC man-portable, and USA shelter variants.
- 165 SBIR/STTR.

Total 14912

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT: BJ5

FY 2001 Planned Program:

- 1133 CRP - Continue transition of newly developed reagent protocols to full-scale production.
- 332 IBAD - Continue material support of rapid prototype systems.
- 4540 JBPDS Blk II - Initiate common Biological Suite Enhancement Design Engineering efforts. These efforts include reducing system size and weight, as well as development and integration of advanced "dry" detection/identification technologies to reduce life cycle costs and logistics demands.

Total 6005

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	10107	8939	9035	11660	10602	12200	12260	16000	Cont
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	0	22614	53596	61689	91533	59415	46167	0	335014
JPO200 JT BIO REM EARLY WARNING SYS (JBREWS)	0	0	0	0	0	34251	36023	25000	Cont
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	1735	2412	1911	1914	2007	1849	1903	2257	Cont
JPO220 LONG RANGE BIO STANDOFF DET SYS (LRBSDS)	0	1907	11733	11799	0	0	0	0	25439
JPO230 PORTAL SHIELD EQUIPMENT	14564	3877	24746	3868	0	0	0	0	47055
M93001 BIO INTEGRATED DETECTOR SYSTEM (BIDS)	14082	19322	0	0	0	0	0	0	33404
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	60702	97614	66953	60520	69609	71835	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**BJ5**

C. Acquisition Strategy:

AB/Port Advanced C	In-house development and fabrication of detection prototypes and use of competitive omnibus contract for fabrication of upgrades.
CRP	Development of reagents to detect threat agents and procurement of more effective agents to replace older stocks. Consolidated research and development (R&D) effort for all Department of Defense (DoD) biological detector/identification requirements. The BJ4 Program provides for the development of new reagents, while the BJ5 Program transitions these reagent protocols into production following the testing of these reagents in fielded platforms. ITF-6A Priority List completed in FY00. Continuing efforts focus on developing and transitioning reagents against ITF-6B Priority List in order to meet JBPDS Block II requirement.
JBPDS	Contractor design, fabrication, platform integration and testing of JBPDS prototypes. Low Rate Initial Production (LRIP) decision contract award prior to completion of Initial Operational Test and Evaluation (IOT&E).
JBPDS Block II	Government run modeling and simulation results will be given to one or more contractors for brass board development and testing. The preferred design will be carried through the rest of EMD by a prime systems contractor. JBPDS Block II will advance biological point detection from the operational level to the tactical level (i.e., smaller, low-powered devices employable by front-line units).
IBAD	In-house installation and support of rapid prototypes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

PROJECT
BJ5

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ABPDS																												
Modeling and Simulation	X	X	X	X																								
Trigger/Sampler Upgrade Development					X	X	X																					
Sys Field Test and Evaluation							X	X																				
Site Installation and Training								X																				
CRP																												
ITF-6A List Complete						X																						
Antibodies Against 20 BW Agents										X																		
ITF-6B List Complete																				X								
JBPDS																												
Perform EDT			X	X	X	X																						
Perform PPQT							X																					
Perform IOT&E											X																	
Block I Milestone III												X																
JBPDSBLK2																												
EMD RFP Release and Source Selection								X	X	X																		
Milestone II Contract Award										X																		
Preliminary Design Review													X	X														
Critical Design Review																	X	X										
FAB Hardware																		X	X	X	X	X	X					
EDT																				X	X	X						
PPQT																							X	X				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

PROJECT
BJ5

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBPDSBLK2 (Cont)																												
IOT&E																										X	X	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**BJ5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	6189	1150	1074
Contractor Hardware Development	2430	100	1490
Contractor ILS Support	6160	2477	0
Contractor Software Development	2870	535	740
Development Test and Evaluation	4639	2954	693
Government Engineering Support	1070	100	668
Government Hardware Development	1174	1112	250
Government ILS Support	762	2723	440
Government Software Development	504	0	0
Operational Test and Evaluation	2037	2357	0
Program Management/Management Support	2537	566	150
SBIR/STTR	0	165	0
Technical data/documentation	2552	673	500
Total	32924	14912	6005

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

PROJECT
CA5

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CA5 CONTAMINATION AVOIDANCE (EMD)	43893	58733	54289	25798	9771	21365	21097	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CA5 CONTAMINATION AVOIDANCE (EMD): This project funds Engineering and Manufacturing Development (EMD) of an array of reconnaissance, detection, identification equipment and warning systems.

Efforts funded in this project are: (1) M22 Automatic Chemical Agent Alarm (ACADA); (2) CB Mass Spectrometer (CBMS); (3) Joint Chemical Agent Detector (JCAD); (4) Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD); (5) Joint Service Lightweight Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS); (6) Joint Warning and Reporting Network (JWARN); and (7) Nuclear, Biological and Chemical Reconnaissance System (NBCRS) BLK II.

The M22 ACADA is more sensitive and responsive than current detectors with similar applications and is capable of concurrent nerve and blister agent detection. The M22 is intended to replace the M8A1 series alarms.

The CBMS will provide significant enhancements by simultaneously detecting and identifying chemical and biological threat agents at lower system cost. CBMS will replace the MM1 Mass Spectrometer.

The NBCRS is a dedicated system of Nuclear and Chemical detection and warning equipment, and Biological sampling equipment integrated into a high speed, high mobility armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross country routes throughout the battlefield. The NBCRS BLK II improvement of the NBCRS will meet all of the requirements contained in the approved requirements document.

The Joint Chemical Agent Detector (JCAD) program will develop a miniaturized, ruggedized, and portable point chemical agent detector that automatically and simultaneously detects, identifies, quantifies, and alerts in the presence of nerve, blister and blood agents. JCAD will be used for aircraft, shipboard, wheeled vehicles, stand alone and individual soldier applications.

The Joint Service Lightweight Standoff Chemical Agent Detector Program (JSLSCAD) utilizing passive infrared technology, provides a first-time on-the-move automatic scanner and chemical standoff detection capability to the Services. The JSLSCAD will replace the M21 Remote Standoff Chemical Agent Alarm (RSCAAL).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CA5**

The JSLNBCRS is a new lightweight NBC detection and identification system and will consist of a Base Vehicle (BV) equipped with hand-held, portable and mounted, current, and advanced NBC detection and identification equipment. The JSLNBCRS will provide on-the-move reconnaissance and surveillance in support of combat, combat support, and combat service support forces. There will be two variants of the JSLNBCRS: the HMMWV variant and the LAV variant.

The Joint Warning and Reporting Network (JWARN) will provide standard integration and analysis of NBC detection information with Command, Control, Communications and Computers Information and Intelligence (C4I2) on the battlefield automating the NBC warning and reporting processes currently performed manually throughout the Services. The JWARN will collectively consist of: Commercial Off the Shelf (COTS) materiel and JWARN software for C4I2. JWARN is being developed for deployment with NBC detectors in the following battlefield applications: combat and armored vehicles; tactical vehicles; vans; shelters; shipboard application; area warning; semi-fixed sites; and fixed sites. Phase I was the initial acquisition and fielding of Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf software to standardize NBC warning and reporting throughout the Armed Forces. Phase II will integrate NBC legacy and future detector systems, NBC Warning and Reporting Software Modules, and NBC battlespace Management Modules in the Joint Services C4I systems. The Multipurpose Integrated Chemical Agent Detector (MICAD) is an integrated component of hardware and software that can process data for use by the JWARN for evaluation and transmittal on the Joint C4I battlespace and also can be used by stand alone systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CA5**

FY 1999 Accomplishments:

- 300 ACADA - Initiated development of Surface Sampler Module which transitions to procurement.
- 5280 CBMS - Developed final design of Block II to allow simultaneous detection and identification of all chemical and biological threat agents at a lower system cost.
- 738 CBMS - Built engineering prototypes.
- 2355 CBMS - Developed final detection algorithm to allow simultaneous detection of chemical and biological agents.
- 3820 CBMS - Conducted engineering tests to establish technical performance baseline.
- 5332 JCAD - Continued development of test unit hardware and software to include mission-specific components.
- 1486 JCAD - Initiated and conducted surety testing and began Engineering Development Test (EDT).
- 1083 JCAD - Continued systems integration.
- 1267 JCAD - Continued to perform program planning and execution of project management functions. Prepared for and developed program documentation and coordinated program with Joint Service Integrated Product Team (IPT) representatives.
- 205 JCAD - Continued development and documentation of technology options for chemical and biological defense requirement and concept of operations for aircraft survivability.
- 874 JSLSCAD - Provided platform/service specific integration information to the contractor and supported test methodology development.
- 2134 JSLSCAD - Initiated fabrication of Engineering Design Test (EDT) articles.
- 1850 JSLSCAD - Completed software and Chemical Agent Detection Support Environment (CADSE) tools.
- 520 JSLSCAD - Completed initial design and conducted Preliminary Design Review (PDR).
- 3925 JSLSCAD - Completed detailed design and conducted Detailed Design Review (DDR).
- 7146 JSLNBCRS - Completed Analysis of Alternatives (AoA) of HMMWV JSLNBCRS variant and continue System Design Review (SDR).
- 5578 JWARN - Conducted competitive source selection for EMD Block II.

Total 43893

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CA5**

FY 2000 Planned Program:

- 1770 CBMS - Finalize design of the Block II to allow simultaneous detection and identification of all chemical and biological threat agents at lower system cost.
- 2413 CBMS - Complete fabrication of nine pre-production units.
- 2578 CBMS - Complete engineering tests to establish technical performance baseline.
- 2534 CBMS - Complete engineering drawings and specifications for integration into the Joint Light NBCRS and NBCRS Block II.
- 4781 JCAD - Continue EMD test units hardware and software development.
- 2879 JCAD - Continue application development, testing and evaluation.
- 1536 JCAD - Continue systems integration.
- 1238 JCAD - Continue in-house program management and support.
- 3171 JCAD - Continue technology development options in preparation for repeatability between Engineering Test & Evaluation prototypes.
- 1800 JSLSCAD - Complete fabrication of 15 Engineering Design Test (EDT) articles.
- 4349 JSLSCAD - Conduct Critical Design Review (CDR) and evaluate issues through EDT.
- 4264 JSLSCAD - Conduct engineering test to include environmental extremes, shock and vibration, EMI, EMP, reliability growth, and Agent testing and continue test methodology development.
- 2052 JSLSCAD - Purchase long lead items for 47 Production Qualification Testing/Initial Operational Test & Evaluation (PQT/IOT&E) test articles.
- 799 JSLSCAD - Joint Service review and preparation of all program documentation to include technical manuals, logistics support analysis, training materials and plans, support of simulation and modeling.
- 1100 JSLSCAD - Integration for test platforms.
- 2828 JSLNBCRS - Start integration of High-Mobility Multi-Purpose Wheeled Vehicle (HMMWV) variant.
- 2789 JSLNBCRS - Complete Developmental Test (DT) I and Operational Test (OT) I.
- 908 JSLNBCRS - Complete Technical Data Package (TDP).
- 3627 JWARN - Conduct DT/OT.
- 4675 JWARN - Conduct Block II development and integration.
- 5740 NBCRS Blk II - Prepare for and award the Engineering, Design & Test (EDT) contract and complete concept design and trade off studies.
- 902 SBIR/STTR.

Total 58733

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CA5**

FY 2001 Planned Program:

- 1238 JCAD - Complete EMD program planning and execution of project management functions. Prepare for and develop MS III program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.
- 3265 JCAD - Complete hardware and software test units development.
- 2796 JCAD - Complete development efforts of the prototype detectors.
- 4676 JCAD - Complete developmental, preliminary qualification tests and field tests; initiate operational test & evaluation.
- 731 JCAD - Complete Systems Integration on the final developmental units to be delivered.
- 1015 JSLSCAD - Continue integration for test platform.
- 3000 JSLSCAD - EDT test review and modify design based on EDT test review.
- 4000 JSLSCAD - Fabricate 47 Pre Production Qualification Testing/Initial Operational Test & Evaluation (PPQT/IOT&E) test articles.
- 6636 JSLSCAD - Conduct PPQT and IOT&E which includes environmental extremes, shock and vibration, EMI, EMP, agent, and shipboard, helicopter, airplane and ground vehicle field testing.
- 799 JSLSCAD - Joint Service preparation and review of all program documentation to include updating all plans to prepare for the Milestone III in FY02.
- 2000 JSLNBCRS - Complete technical data package and requisite acquisition documentation for Milestone (MS) III.
- 5853 JSLNBCRS - Complete Operational Testing (OT).
- 5276 JWARN - Continue Phase II integration of NBC legacy and future detector systems, develop NBC warning and reporting modules and battlespace management modules in the Joint Services C4I systems.
- 2000 JWARN - Start DT/OT of Phase II C4I software modules and interfaces for legacy and future detector systems.
- 6367 NCBRS Blk II - Fabricate four prototype systems.
- 3100 NBCRS Blk II - Complete engineering and logistics documentation.
- 1537 NBCRS Blk II - Conduct system test and evaluation.

Total 54289

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT: CA5

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
B96801 RADIAC - POCKET AN/UDR - 13	3241	2875	3079	4082	7816	198	0	0	21291
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	10107	8939	9035	11660	10602	12200	12260	16000	Cont
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	0	27186	27941	25850	25977	26000	Cont
JX0002 CA SYSTEM FIELDING SUPPORT/SPARES	1060	1099	0	0	0	0	0	0	2159
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	29437	36923	49356	496	99	0	0	0	116311
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	25873	24716	31552	6316	5526	34283	35406	35000	Cont
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	60702	97614	66953	60520	69609	71835	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	8078	11421	7406	9195	8592	5741	1512	0	51945
S02201 IMPROVED CHEMICAL AGENT MONITOR (ICAM)	9403	12685	12762	262	99	0	0	0	35211
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	0	0	3134	9000	19147	28858	40000	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CA5**

C. Acquisition Strategy:

ACADA	Non Developmental Item (NDI) contract fabrication of test items, in-house testing, contract fabrication of production units with option from multiple sources.
CBMS	Contract development and fabrication of prototype test hardware, contractor testing, integration by host platforms, contract fabrication of production units.
JCAD	Phase I contract development and fabrication of six Engineering Developmental Test (EDT) prototypes, contractor risk reduction, and government testing. Phase II includes contract development and fabrication of 168 pre-production units, contractor and government testing.
JSLSCAD	Contract development, in-house/contract testing, in-house/contract platform integration, contract fabrication of production units.
JSLNBCRS	Development and fabrication of prototypes. Execute option for contract platform integration.
JWARN	Contract development and integration of software, start Phase II of the JWARN program. Contract development and fabrication of test prototypes; contractor/in-house testing; contract fabrication of production units.
NBCRS Block II	The Block II mod is an integration effort of new Army materiel to improve the Fox NBCRS using contractor and depot experts.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CA5**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ACADA																												
Surface Sampler Development	X	X	X	X																								
CBMS																												
BLK II - Critical Design Review	X																											
BLK II - Engr Tests	X	X	X	X	X	X	X	X																				
JCAD																												
EMD Phase 1	X	X	X																									
EMD Phase II			X																									
Govt Prelim Qual Test/ Development Test							X	X	X	X																		
Govt OT Test							X	X	X	X	X																	
Milestone III decision												X	X	X														
User Need Date																X												
JSLSCAD																												
Fabricate EDT Units			X	X	X	X																						
Critical Design Review					X																							
PPQT/IOT&E										X	X	X	X	X														
JS Milestone III IPR															X													
JSLTNBCRS																												
System Design Review		X																										
Preliminary Design Review - HMMWV			X																									
Critical Design Review - HMMWV				X																								
Operational Testing							X	X	X	X																		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CA5**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSLTNBCRS (Cont)																												
MS III											X																	
IOC																X												
JWARN																												
Phase II DT/OT													X	X														
Milestone III															X													
IOC																X												
NBCRSBLK2																												
Block II R&D contract award					X																							
Purchase GFE and do digital integration							X	X	X	X																		
Fabricate Engineering Prototypes										X	X	X																
DT/OT												X	X	X														
Block II Type Classification																	X											
Block II Modification Contract Award																		X										
Block II First Article																							X					
Block II New Material Release																									X			
Block II First Unit Equipped																									X	X		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CA5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	11643	7452	8107
Contractor Hardware Development	3724	14004	11601
Contractor ILS Support	202	203	501
Contractor Software Development	3339	4241	1939
Development Test and Evaluation	8201	11575	7066
Government Engineering Support	8205	8808	3502
Government Hardware Development	300	2489	2200
Government ILS Support	1000	520	570
Government Software Development	100	600	300
Operational Test and Evaluation	0	2850	13266
Program Management/Management Support	3326	3051	2581
SBIR/STTR	0	902	0
Technical data/documentation	3853	2038	2656
Total	43893	58733	54289

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CO5**

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CO5 COLLECTIVE PROTECTION (EMD)	1190	5734	7802	7742	7657	4541	5190	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project CO5 COLLECTIVE PROTECTION (EMD): This project provides Engineering and Manufacturing Development (EMD) of Joint Service Nuclear, Biological & Chemical (NBC) collective protection systems that are smaller, lighter, less costly to build and maintain, and more logistically supportable to enable mission accomplishment in NBC environments. Collective protection platforms include shelters, vehicles, ships, aircraft, buildings and hospitals.

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

SCPE will provide a contaminant-free environment within specified zone boundaries of high priority ships. Equipment under development within SCPE is critical to the viability of shipboard collective protection systems due to improved effectiveness and greatly reduced logistics costs.

JCPE will provide needed improvements and cost saving standardization to currently fielded systems. JCPE will use the latest technologies to improve filtration, shelter materials, and environmental controls to provide affordable, lightweight, easy-to-operate and maintain equipment.

JTCOPS will be a lightweight, modular, self-supporting collective protection shelter system that will provide relief from psychological and physiological stresses during sustained operations in a contaminated environment. JTCOPS will be used as stand-alone billeting, medical, and operational facilities, or within fixed facilities to take advantage of existing structures. JTCOPS will be equipped with environmental control, NBC filters and blowers, and power generation systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)	CO5

FY 1999 Accomplishments:

- 470 SCPE - Continued long-term shipboard testing of new longer-life laminated High Efficiency Particulate Absorbing (HEPA) filters, pre-filters and Limited Protection (LP) HEPA filter.
- 370 SCPE - Completed fan rotor specification package to improve fan efficiency. Began testing prototype Collective Protection System (CPS) fans.
- 350 SCPE - Updated CPS technical manuals, Technical Data Package (TDP) documentation. Documented pre-filters, LP HEPA filters, LP pre-filters, and HEPA filters. Prepared test reports and acquisition/logistics documentation.

Total 1190

FY 2000 Planned Program:

- 291 JCPE - Perform program planning and project management. Develop program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.
- 1700 JCPE - Perform tradeoff analysis to improve the M48A1 and M56 carbon filters. Perform tradeoff analysis to improve motorblowers on Modular Collective Protection Equipment (MCPE) and M20A1 Simplified Collective Protection Equipment (SCPE). Begin redesign of the M49 Fixed Installation Filter (FIF) to reduce production costs. Begin development of improved 200 Cubic Feet per Minute (CFM) Particulate filter to extend filter life. Develop and test Acceptance Tester for Recirculation Filter Unit (RFU) used on MCPE and Chemically Protected Deployable Medical Shelter System.
- 384 JCPE - Begin development of lightweight Environmental Control Unit (ECU) for transportable collective protection systems. Complete performance testing of ECU to improve the performance of the Portable Collective Protection System (PCPS).
- 1200 JTCOPS - Conduct program management functions, obtain engineering support, prepare program documentation for Milestone I/II, and fund participation of Joint Integrated Product Team (JIPT) representatives.
- 1364 JTCOPS - Award two development contracts for system design and fabrication of one prototype from each contract for Engineering Development Testing.
- 712 SCPE - Continue development and testing of the pre-filters and long-life HEPA filters in order to establish a statistically significant database for assessing the long term performance of these improvements. Complete land-based testing and begin shipboard testing of CPS fan rotors. Prepare and update documentation (test reports, technical manuals and TDP).
- 83 SBIR/STTR.

Total 5734

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT: CO5

FY 2001 Planned Program:

- 384 JCPE - Perform program planning and project management. Prepare for and develop program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.
- 1500 JCPE - Begin development of improved carbon filters to extend service life and reduce production costs. Complete development of and test improved 200 CFM and FIF filters.
- 670 JCPE - Begin development and test of improved motorblowers to improve efficiency, reliability, size, and weight. Continue development and testing of lightweight ECU for transportable collective protection systems.
- 1500 JTCOPS - Conduct program management functions, obtain engineering support, prepare program documentation, and fund participation of Joint Integrated Product Team (JIPT) representatives.
- 3039 JTCOPS - Complete the fabrication of one prototype from each contract for Engineering Development Test.
- 709 SCPE - Continue testing of CPS fan rotors on designated ships. Continue long-term testing of shipboard filter improvements. Prepare and update documentation (test reports, Tech Manuals and TDP).

Total 7802

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
JCP001 COLLECTIVELY PROTECTED DEPLOYABLE MEDICAL SYSTEM	0	2746	5964	1987	0	0	0	0	10697
JF0102 TRANSPORTABLE COLLECTIVE PROT SYS	3852	6527	0	0	0	0	0	0	10379
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	575	3388	5456	2313	3181	0	0	0	14913
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT	1000	12058	17693	17722	17323	19416	18899	11400	Cont
JN0017 JOINT COLLECTIVE PROT SYSTEMS & IMPROVEMENTS	0	1193	1052	680	684	2725	2748	8600	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	16311	13910	11470	16394	16409	20500	20564	23645	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CO5**

C. Acquisition Strategy:

SCPE	In-house/contract design and fabrication of prototype components with in-house testing. Equipment will be procured as part of new ship construction using Ship Conversion Navy (SCN) funds.
JCPE	This program will utilize the modification clause under DoD 5000 to provide solutions to current deficiencies in fielded collective protection equipment. The various efforts under JCPE will use market analysis and tradeoff studies to determine the optimum configuration for any modifications or improvements. All modified components will be contractor fabricated and in-house tested to ensure performance compatibility. Performance and/or procurement specifications will be updated to ensure that modifications are included in future acquisitions. Modified components will be integrated into existing systems via field modification or replacement spares.
JTCOPS	Two competitive contracts will be awarded for the design and prototype fabrication phase, with options for Low Rate Initial Production (LRIP) and production. Following Engineering Development Testing (EDT) of one prototype from each contract, one contractor will be selected to proceed to the LRIP phase to produce systems for Production Qualification Testing (PQT) and Operational Testing (OT). Following MS III, the production option of the contract will be exercised.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

PROJECT
CO5

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JCPE																												
Tradeoff Analysis Improved Carbon Filter					X	X	X	X																				
Performance Testing of ECU for PCPS					X	X	X																					
Develop Improved 200 cfm Filters					X	X	X	X	X	X	X	X																
Fixed Installation Filter (FIF) Redesign					X	X	X	X	X	X	X	X																
Develop & Test RFU Acceptance Tester					X	X	X	X																				
Survey/Tradeoff Analysis of Motorblowers					X	X	X	X																				
Develop & Test Improved Carbon Filter									X	X	X	X	X	X	X													
Develop & Test Lightweight ECU						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
Develop & Test Motorblowers									X	X	X	X	X	X	X	X	X	X	X	X								
Develop Residual Life Indicator																	X	X	X	X	X	X	X	X	X	X	X	X
Develop Confined Space Bio-filtration																					X	X	X	X	X	X	X	X
JTCOPS																												
Milestone I/II						X																						
Design and Fab of test prototypes								X	X	X	X	X	X	X	X													
Engineering Development Test (EDT)														X	X													
Low Rate Initial Production (LRIP)															X	X	X	X	X									
Production Qualification Test (PQT)																			X	X	X	X						
Operational Test (OT)																						X	X					
Milestone III																								X				
SCPE																												
Develop CPS Fan Rotor Specification	X	X	X	X																								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CO5**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SCPE (Cont)																												
Fan Testing & Evaluation (land-based)	X	X	X	X	X	X	X																					
Long-term Shipboard Testing of Filters	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X												
Update Documentation (Tech Manuals, TDP)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X												
Fan Testing & Evaluation (shipboard)								X	X	X	X	X	X	X	X	X												
Transition to JCPE																	X	X	X	X								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CO5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	0	300	400
Contractor Hardware Development	0	2093	3889
Development Test and Evaluation	370	0	0
Government Engineering Support	0	520	530
Government Hardware Development	200	1662	1840
Operational Test and Evaluation	100	0	0
Program Management/Management Support	170	791	884
SBIR/STTR	0	83	0
Technical data/documentation	350	285	259
Total	1190	5734	7802

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CP5**

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
CP5 COUNTERPROLIFERATION SUPPORT (EMD)	0	5589	0	0	0	0	0	0	5589

A. Mission Description and Budget Item Justification:

Project CP5 COUNTERPROLIFERATION SUPPORT (EMD): The Counterproliferation Support Program was funded in FY00 to complete the development of the Long Range Biological Stand-off Detection System (LR-BSDS) for Initial Operational Test & Evaluation (IOT&E) and to support type classification of the LR-BSDS prior to production.

FY 1999 Accomplishments: None

FY 2000 Planned Program:

- 2200 LR-BSDS - Complete Fabrication of Systems 3 & 4.
- 3009 LR-BSDS - Conduct Developmental Tests and IOT&E Tests.
- 299 LR-BSDS - Conduct Milestone (MS) III In-progress Review (IPR).
- 81 SBIR/STTR.

Total 5589

FY 2001 Planned Program: No planned program

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **CP5**

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
CP3 COUNTERPROLIFERATION SUPPORT (Adv Tech Dev)	7098	10434	10213	11416	7321	7663	13345	29183	Cont
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	41461	14614	14147	13539	18180	18103	13187	0	133231
JPO220 LONG RANGE BIO STANDOFF DET SYS (LRBSDS)	0	1907	11733	11799	0	0	0	0	25439
JPO230 PORTAL SHIELD EQUIPMENT	14564	3877	24746	3868	0	0	0	0	47055

C. Acquisition Strategy:

LR-BSDS — Fabricate LR-BSDS using a competitive prime systems integration contract.

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
LRBSDS																												
LR-BSDS (CP5) Fabrication					X	X	X																					
LR-BSDS Technical Operational Testing							X																					
Milestone III IPR								X																				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**CP5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Hardware Development	0	2200	0
Development Test and Evaluation	0	1010	0
Operational Test and Evaluation	0	1999	0
Program Management/Management Support	0	299	0
SBIR/STTR	0	81	0
Total	0	5589	0

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **DE5**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DE5	DECONTAMINATION SYSTEMS (EMD)	1355	3764	3611	7279	15393	11825	11475	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DE5 DECONTAMINATION SYSTEMS (EMD): This project funds Engineering and Manufacturing Development (EMD) of decontamination equipment for the Joint Service Fixed Site Decontamination (JSFXD) Program aimed at developing a family of decontaminants and family of applicators. Block I will field decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators required to provide the full fixed site decontamination capability (excluding Block III). Block III will provide decontaminants and applicators for skin/casualties with open wounds. The program will provide soldiers, sailors, marines, and airmen the equipment necessary to fully decontaminate their vital areas to sustain critical cargo flow into theater.

FY 1999 Accomplishments:

- 923 JSFXD - Perform program planning and execution of project management functions. Prepare for and develop MS I program documentation and coordinate program with Joint Service Integrated Product Team (IPT) representatives.
- 432 JSFXD - Initialized characterization of mature technologies for COT/GOTS down selection for development.

Total 1355

FY 2000 Planned Program:

- 1200 JSFXD - Prepare Engineering Change Proposals (ECPs) for DT/OT.
- 830 JSFXD - Prepare procurement package for family of decontaminants and award contract for Block I.
- 1679 JSFXD - Conduct Developmental Test/Operational Testing (DT/OT) on family of decontaminants.
- 55 SBIR/STTR.

Total 3764

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **DE5**

FY 2001 Planned Program:

- 1844 JSFXD - Prepare Logistics Support Packages and complete Milestone (MS) III documentation for Block I.
- 1767 JSFXD - Conduct Developmental Test/Operational Testing (DT/OT) on decontamination applicators.

Total 3611

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
G47001 MODULAR DECON SYSTEM	5950	7562	9430	9771	9532	95	0	0	42340
JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)	0	0	0	1516	1998	7505	6615	0	17634
JN0018 SORBENT DECON	0	1493	2765	4779	4799	0	0	0	13836
M67401 M17 LTWT DECON SYSTEM (LDS)	4815	4638	0	0	0	0	0	0	9453

C. Acquisition Strategy: JSFXD In-house/contractor design, development and fabrication of engineering models for test.

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSFXD																												
Block II MS I								X																				
Block II Prototype Testing									X	X	X																	
Block II MS II											X																	
Block II MS III																			X									
Block III MS I/II												X																
Block III Milestone III																							X					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**DE5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor ILS Support	0	0	200
Development Test and Evaluation	0	1680	600
Government ILS Support	0	0	400
Operational Test and Evaluation	0	0	1167
Program Management/Management Support	923	807	200
SBIR/STTR	0	55	0
Technical data/documentation	432	1222	1044
Total	1355	3764	3611

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **IP5**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
IP5	INDIVIDUAL PROTECTION (EMD)	7485	10053	3819	20009	19902	21785	0	0	83053

A. Mission Description and Budget Item Justification:

Project IP5 INDIVIDUAL PROTECTION (EMD): This project funds Engineering & Manufacturing Development (EMD) of individual protection equipment, such as the Explosive Ordnance Disposal (EOD) ensemble, aimed at maintaining current protection levels while reducing physiological and logistical burdens. The goal is to provide equipment which allows the individual soldier, sailor, airman, or marine to operate in a contaminated Nuclear, Biological, & Chemical (NBC) environment with no or minimal degradation of his/her performance. Funding is provided for: (1) Design of Aircrew Eye-Respiratory Protection (AERP) systems modification kits to install in aircraft; (2) Initiate Joint Service Aviation Mask (JSAM), which will replace multiple Service-specific aviator chemical protective masks; (3) Start of the JSLIST P3I program and development of JSLIST Glove and; (4) Initiate Joint Protective Aircrew Ensemble (JPACE) program to standardize aircrew ensembles and reduce user fatigue.

FY 1999 Accomplishments:

- 777 AERP - Began aircraft modification design for B-2 and provided in-house program support.
- 5748 JSLIST P3I - Completed materiel screening, test analysis and candidate selection. Conducted field testing to address requirements for all four Services and Special Operations Forces.
- 960 JSLIST P3I - Procured prototypes for field evaluation.

Total 7485

FY 2000 Planned Program:

- 104 AERP - Complete B-2 aircraft modification design and in-house program support.
- 1439 JPACE - Identify and document performance specifications for system, materials, and components leveraging other complimentary programs such as JSLIST P3I.
- 989 JPACE - Develop and fabricate 25 initial prototype ensembles for Developmental Testing (DT). Prototype ensembles will consist of various sizes.
- 52 JSAM - Conduct source selection for development contract, prepare for, and conduct Milestone decision.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**IP5**

FY 2000 Planned Program (Cont):

- 4544 JSAM - Prepare program management documents for competitive acquisition and coordinate with Joint Service IPT. Initiate contract for research, development and procurement of a Joint Service Aircrew Mask.
- 300 JSLIST GLOVE - Procure prototype candidates for testing.
- 850 JSLIST GLOVE - Conduct laboratory chemical agent tests.
- 850 JSLIST GLOVE - Conduct user wear test and operational assessment.
- 450 JSLIST GLOVE - Prepare technical data input for materials and patterns production specifications.
- 329 JSLIST GLOVE - Continue In-house program management and support.
- 146 SBIR/STTR.

Total 10053

FY 2001 Planned Program:

- 108 AERP - Aircraft modification design and in-house program support.
- 500 JPACE - Complete initial prototype development and fabrication for Developmental Testing (DT).
- 2911 JPACE - Developmental Testing: Conduct simulant, human factor, compatibility, environmental, and live agent testing of initial prototypes. Various sizes of prototypes will be tested.
- 300 JPACE - Manufacture 100 improved prototypes for Operational Testing (OT).

Total 3819

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT: IP5

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
JA0002 JT SVC AVIATION MASK (JSAM)	0	0	0	0	0	7154	14833	11000	Cont
JA0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	0	0	0	0	0	0	15822	18953	Cont
JN0011 AERP AIRCRAFT MODS	4059	1880	887	1254	948	0	0	0	9028
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	575	3388	5456	2313	3181	0	0	0	14913
JN0015 JOINT PROTECTIVE AIRCREW ENSEMBLE	0	0	0	0	21473	21909	21568	0	64950
M95801 PROTECTION ASSESSMENT TEST SYSTEM (PATS) M41	5300	5285	0	0	0	0	0	0	10585
M99501 MASK, AIRCRAFT M45	2179	0	373	174	0	0	0	0	2726
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A1	15819	11194	1506	142	0	0	0	0	28661
MA0400 PROTECTIVE CLOTHING	80345	95055	96475	89493	86844	87319	87967	0	623498
N00020 CB RESPIRATORY SYSTEM - AIRCREW	7286	7338	4028	0	0	0	0	0	18652

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**IP5**

C. Acquisition Strategy:

AERP	Contract development and fabrication of prototype test hardware.
JSAM	The draft Acquisition Strategy outlines the strategy for a combined full-scale development (Program Definition and Risk Reduction and Engineering and Manufacturing Development). The contract for development is based on a joint service systems requirement document with special emphasis on meeting an average unit production price. The strategy also provides for contractor commitment to a production price commitment curve for production.
JPACE	Conduct Commerce Business Daily (CBD) material search for advanced material technologies addressing aviation material performance requirements from JPACE JORD. Leverage JSLIST P3I advanced material testing and technologies to maximum extent possible. Competitive contract to develop materials/components and manufacture prototypes for developmental and operational testing.
JSLIST P3I	This program employs a pre-planned product improvement strategy as an extension of JSLIST Program. Specifically, the JSLIST P3I will invite contractors to submit tested protective materials for evaluation in the quest for the next generation of advanced chemical protective clothing.
JSLIST GLOVE	Conduct development and operational assessment of candidate chemical protective materials to satisfy the Services and SOCOM urgent requirement for an improved chemical protective glove.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **IP5**

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AERPMODS																												
Modify AC-130	X	X	X	X																								
Modify RC-135	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
Modify B-1B	X	X	X	X																								
JPACE																												
Identify Requirements/Specifications					X	X																						
Develop Prototypes for DT						X	X	X	X																			
Conduct Developmental Testing									X	X	X	X																
Conduct Operational Testing														X	X	X												
Milestone III																	X											
Award Production Contract																		X										
JSAM																												
RFP Development					X	X																						
Source Selection							X	X																				
PDRR Phase								X	X	X	X	X	X	X	X													
Milestone II																X												
EMD Phase																X	X	X	X	X	X	X	X	X	X	X		
Milestone III																											X	
JSGPM																												
Proposals Received				X																								
PROT CLTH																												
JSLIST P3I DT	X																											

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
5 - Engineering and Manufacturing Dev

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

PROJECT
IP5

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PROT CLTH (Cont)																												
DT/OT		X	X	X																								
Milestone IIIA							X																					
JSLIST Glove OT							X																					
JSLIST Glove MS IIIA										X																		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**IP5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Contractor Engineering Support	0	593	0
Contractor Hardware Development	660	2183	800
Contractor ILS Support	0	367	150
Development Test and Evaluation	0	272	1561
Government Engineering Support	777	3346	858
Government ILS Support	0	367	75
Operational Test and Evaluation	5448	800	0
Program Management/Management Support	600	1256	75
SBIR/STTR	0	146	0
Technical data/documentation	0	723	300
Total	7485	10053	3819

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE: 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT: MB5

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
MB5	MEDICAL BIOLOGICAL DEFENSE (EMD)	14635	18927	24198	57206	68991	42357	33619	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MB5 MEDICAL BIOLOGICAL DEFENSE (EMD): This project funds the engineering and manufacturing development (EMD) phase (acquisition Phase II) of vaccines, drugs and diagnostic medical devices which are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. Phase II efforts for medical biological defense product development involve production scale-up studies, consistency manufacturing, and expanded human safety studies. Results from these efforts and those conducted during the Program Definition and Risk Reduction (PDRR) phase will be used to submit a biologic license application to the Food and Drug Administration (FDA) for product licensure. Phase II efforts are expected to be accomplished in three to six plus years. Upon FDA licensure the product will transition to full-scale licensed production. Products to be developed under this program include: recombinant botulinum next generation anthrax, plague, Q fever, ricin, smallpox, tularemia, and Venezuelan Eastern Encephalitis (VEE), and combined VEE/Eastern Equine Encephalitis/Western Equine Encephalitis (VEE/EEE/WEE) vaccines.

FY 1999 Accomplishments:

- 8000 Conducted Phase II effort for Tularemia (redirected to Phase I for FY00) and Q fever vaccines.
- 1778 Continued clinical trials to complete data collection/analysis to submit license applications for the FDA for Botulism Pentavalent Toxoid vaccine.
- 2179 Continued Phase II effort to reduce the immunization schedule with the licensed Anthrax vaccine.
- 2500 Supports the next generation vaccine program, which is determined to be the most effective and efficient path toward a next generation anthrax vaccine in terms of cost, schedule and performance.
- 178 Support the special immunization program to protect at-risk personnel from exposure to potential BW agents in the laboratory and in the field, and maintain capability to continue EMD for de-speciated Botulinum Antiserum.

Total 14635

FY 2000 Planned Program:

- 14873 Continue phase II efforts for Q fever vaccine and Botulinum Pentavalent Toxoid.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**MB5**

FY 2000 Planned Program (Cont):

- 3780 Commence evaluation effort for reducing the Anthrax immunization schedule.
- 274 SBIR/STTR.

Total 18927

FY 2001 Planned Program:

- 17851 Continue Phase II effort for Q fever vaccine and Botulinum Pentavalent Toxoid.
- 3683 Initiate Phase II effort for Smallpox vaccine.
- 2664 Complete Anthrax immunization reduction effort and submit application for re-licensure.

Total 24198

B Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	14818	48634	49795	40430	45649	60834	64031	58266	Cont

C. Acquisition Strategy: Prime systems contract for advanced development, licensure, production, and storage of biological defense vaccines.

D Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VACCINES																												
JVAP prime contract	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**MB5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Consistency Lot Production (vaccines)	1754	2315	3165
Contractor Engineering Support	1169	1545	2110
Development Test and Evaluation	8184	10927	14622
Program Management/Management Support	2944	3091	3246
SBIR/STTR	0	274	0
Technical data/documentation	584	775	1055
Total	14635	18927	24198

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **5 - Engineering and Manufacturing Dev**

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

PROJECT: **MC5**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
MC5	MEDICAL CHEMICAL DEFENSE (EMD)	1677	746	1091	1463	1549	1565	1612	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MC5 MEDICAL CHEMICAL DEFENSE (EMD): This project funds the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical agent threats facing U.S. forces in the field. This project supports research efforts in the Engineering and Manufacturing Development (EMD) phases of the acquisition strategy for pretreatment therapeutic drugs, diagnostic equipment, and other life support equipment for protection against and management of chemical warfare agents. Project funds research and development of safety studies, manufacturing scale up, process validation, drug interaction, performance test and submission of FDA drug licensure application(s).

FY 1999 Accomplishments:

- 1123 Initiated a multi-year stability testing study and responded to regulatory requirements for Multichambered Autoinjector (MA).
- 13 Completed Convulsant Antidote for Nerve Agents (CANA) long-term stability testing.
- 225 Completed absorption and sweat studies in humans for the Topical Skin Protectant (TSP).
- 159 Continued shelf-life stability testing and completed and submitted New Drug Application to the Food and Drug Administration (FDA) for the TSP.
- 40 Conducted a Milestone II in-progress review for the multichambered autoinjector.
- 117 Submitted New Drug Application to the FDA for the multichambered autoinjector.

Total 1677

FY 2000 Planned Program:

- 54 Continue a multi-year stability study and conduct a Milestone III in-progress review on multichambered autoinjector.
- 197 Continue shelf-life stability testing of TSP.
- 434 Initiate surrogate validation study of Pyridostigmine Bromide.
- 50 Initiate and complete a user and durability study for the TSP.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**MC5**

FY 2000 Planned Program (Cont):

- 11 SBIR/STTR.

Total 746

FY 2001 Planned Program:

- 243 Initiate population safety study of cyanide pretreatment.
- 356 Initiate manufacturing scale-up and process validation of cyanide pretreatment.
- 295 Initiate drug interaction studies of cyanide pretreatment.
- 197 Complete validation studies and submit licensure documentation for Pyridostigmine Bromide.

Total 1091

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: Test and evaluate in-house and commercially developed products in government-managed trials.

D Schedule Profile:	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MEDCHEM																												
Cyanide Pretreatment - MS II														X														
Cyanide Pretreatment - MS III																								X				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-3 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Dev	**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**	**MC5**

E. Project Cost Breakdown:

	FY 1999	FY 2000	FY 2001
Operational Test and Evaluation	1145	88	131
Program Management/Management Support	311	550	820
SBIR/STTR	0	11	0
Technical data/documentation	221	97	140
Total	1677	746	1091

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Budget Activity (BA) Cost		30737	24553	23907	24515	25009	24667	25385	Continuing	Continuing
0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	25099	24553	23907	24515	25009	24667	25385	Continuing	Continuing
0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5638	0	0	0	0	0	0	0	5638

A. Mission Description and Budget Activity Justification: This program element provides research, development, testing and evaluation management support to the Department of Defense Nuclear, Biological and Chemical (NBC) defense program.

This effort includes support to Department of Defense (DoD) response to Chemical/Biological (CB) terrorism, funds joint doctrine and training support, funds sustainment of a technical test capability at Dugway Proving Ground, and financial/program management and support program. Additionally, this program element funds the Joint Point Test program (049), which provides a response to Commanders-in-Chief (CINCs) and Service issues for fielded capability.

Anti-terrorism funding provides DoD with a process and means to conduct assessments of installation vulnerabilities to Chemical/Biological threats.

Joint Training and Doctrine Support funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing Chemical Biological Defense (CBD) systems. The Training and Doctrine efforts also fund chemical and biological modeling and simulation to support the warfighter.

Dugway Proving Ground, a Major Range and Test Facility Base (MRTFB), funding provides for Chemical Biological Defense testing of DoD material, equipment and systems from concept through production. It finances indirect test operating costs not billable to test customers, including indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

Management Support provides funds for the DoD NBC defense program to allow overview and integration of CBD medical and non-medical programs by the Office of the Secretary of Defense (OSD) NBC Defense Steering Committee, which is composed of the Director, Defense Research and Engineering (DDR&E), the Director, Defense Threat Reduction Agency (DTRA), the Director of DTRA CB Defense Directorate, the Deputy Assistant to the Secretary of Defense for CB Defense (DATSD (CBD)), and the Deputy Director for Strategy & Policy, J-5; funds execution management by DTRA; integration of joint requirements, training and doctrine by the Joint Service Integration Group (JSIG); joint research, development and acquisition (RDA) planning, input to the annual report to Congress and Program Objectives Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); and review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

The Joint Point Test program (O49) provides funds to plan, conduct, evaluate, and report on joint tests (for other than developmental hardware) and accomplish operational research assessments in response to requirements received from the Services and the Commanders-in-Chief (CINCs) for already fielded equipment and systems.

Note: In November 1997, DoD published the Defense Reform Initiative (DRI), which directed the elimination of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ASTD (NCB)) and the creation of a new defense agency, DTRA. As a result of the DRI, the OSD oversight functions for the CB Defense Program were transferred to the office of the DATSD (CBD) under the DDR&E, while DoD execution management of the program was transferred to DTRA. Effective FY99, the financial management responsibilities for the Chemical/Biological (CB) Defense Program were transferred from the Ballistic Missile Defense Organization (BMDO) to DTRA.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)

	COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	25099	24553	23907	24515	25009	24667	25385	Continuing	Continuing
AT6	ANTI-TERRORISM	2841	472	458	459	460	465	488	Continuing	Continuing
DT6	JOINT DOCTRINE AND TRAINING SUPPORT	3057	3339	3232	3292	3341	3388	3511	Continuing	Continuing
DW6	DUGWAY PROVING GROUND	9983	10065	10121	10383	10668	10207	10511	Continuing	Continuing
MS6	MANAGEMENT SUPPORT	7619	9090	8565	8710	8817	8869	9085	Continuing	Continuing
O49	JOINT POINT TEST	1599	1587	1531	1671	1723	1738	1790	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element provides research, development, testing and evaluation management support to the Department of Defense Nuclear, Biological and Chemical (NBC) defense program.

This effort includes support to Department of Defense (DoD) response to Chemical/Biological (CB) terrorism, funds joint doctrine and training support, funds sustainment of a technical test capability at Dugway Proving Ground, and financial/program management and support program. Additionally, this program element funds the Joint Point Test program (049), which provides a response to Commanders-in-Chief (CINCs) and Service issues for fielded capability.

Anti-terrorism funding provides DoD with a process and means to conduct assessments of installation vulnerabilities to Chemical/Biological threats.

Joint Training and Doctrine Support funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing Chemical Biological Defense (CBD) systems. The Training and Doctrine efforts also fund chemical and biological modeling and simulation to support the warfighter.

Dugway Proving Ground, a Major Range and Test Facility Base (MRTFB), funding provides for Chemical Biological Defense testing of DoD material, equipment and systems from concept through production. It finances indirect test operating costs not billable to test customers, including indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)

Management Support provides funds for the DoD NBC defense program to allow overview and integration of CBD medical and non-medical programs by the Office of the Secretary of Defense (OSD) NBC Defense Steering Committee, which is composed of the Director, Defense Research and Engineering (DDR&E), the Director, Defense Threat Reduction Agency (DTRA), the Director of DTRA CB Defense Directorate, the Deputy Assistant to the Secretary of Defense for CB Defense (DATSD (CBD)), and the Deputy Director for Strategy & Policy, J-5; funds execution management by DTRA; integration of joint requirements, training and doctrine by the Joint Service Integration Group (JSIG); joint research, development and acquisition (RDA) planning, input to annual report to Congress and Program Objectives Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); and review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat.

The Joint Point Test program (O49) provides funds to plan, conduct, evaluate, and report on joint tests (for other than developmental hardware) and accomplish operational research assessments in response to requirements received from the Services and the Commanders-in-Chief (CINCs) for already fielded equipment and systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)

B. Program Change Summary:	**FY 1999**	**FY 2000**	**FY 2001**
Previous President's Budget (FY 2000/FY 2001)	24849	24043	24054
Appropriated Value	24849	24043	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	-414		
c. Omnibus or Other Above Threshold Reductions	-201	-50	
d. Below Threshold Reprogramming	865	628	
e. Rescissions		-68	
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			-147
Current Budget Submit (FY2001/PRES BUD)	25099	24553	23907

Change Summary Explanation:

Funding: .

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **6 - Management Support**

PE NUMBER AND TITLE: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**

PROJECT: **AT6**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
AT6	ANTI-TERRORISM	2841	472	458	459	460	465	488	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project AT6 ANTI-TERRORISM: The growing threat of the use of Chemical/Biological (CB) agents in an act of terrorism places the United States Armed Forces installations and personnel at risk. This project provides the Department of Defense (DoD) a process and means to conduct assessments of installation vulnerabilities to CB threats in relation to terrorist activities. The knowledge gained is to be integrated into the training of U.S. forces both in the Continental United States (CONUS) and overseas. Funding added in response to DoD Directive 2000.12, "DoD Combating Terrorism Program," dated September 15, 1996 and the Downing Task Force Report, "Global Interests/Global Responsibilities," dated September 16, 1996. Funding provides planning tools, training tools, and sustainment of these tools in the out years.

FY 1999 Accomplishments:

- 700 Developed interactive CD-ROM for Weapons of Mass Destruction (WMD) exercises.
- 330 Developed Level III WMD training program CD-ROM.
- 300 Developed Installation Emergency Response to WMD Terrorism course.
- 160 Provided support to the WMD Anti-Terrorism/Force Protection (AT/FP) Information Center and Assistance Program.
- 750 Conducted an exercise with Department of Energy (Gas to Liquid Capture Unit).
- 75 Conducted a Defense Threat Reduction Agency/Soldiers Biological Chemical Command tabletop exercise.
- 100 Developed a Smallpox exercise scenario.
- 145 Implemented Joint Service Installation Vulnerability Assessment (JSIVA) augmentation.
- 281 Updated standards and reviewed installation WMD implementation plans to minimize WMD vulnerability.

Total 2841

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	AT6

FY 2000 Planned Program:

- 160 Sustain anti-terrorism training base.
- 160 Plan and assess a tabletop exercise and develop a new scenario exercise.
- 145 Prepare an annual update to the WMD CD-ROM training program.
- 7 SBIR/STTR.

Total 472

FY 2001 Planned Program:

- 152 Continue to sustain anti-terrorism training base.
- 157 Plan and assess annual tabletop exercise and develop a new scenario exercise.
- 149 Prepare an annual update to the WMD CD-ROM training program.

Total 458

B. Other Program Funding Summary: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **6 - Management Support**

PE NUMBER AND TITLE: **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**

PROJECT: **DT6**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DT6	JOINT DOCTRINE AND TRAINING SUPPORT	3057	3339	3232	3292	3341	3388	3511	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DT6 JOINT DOCTRINE AND TRAINING SUPPORT: The activities of this project directly support the Joint Service Chemical/Biological (CB) Defense Program in particular the Joint Service Integration Group (JSIG) and Doctrine and Training (DT) and Modeling and Simulation (MODSIM). This effort (1) funds preparation of Joint Doctrine and Tactics, Techniques, and Procedures (TTP) for developing CB Defense Systems; (2) supports the US Army Chemical School (USACMLS) Joint Senior Leaders' Course (JSLC); (3) provides funds to help correct training and doctrine deficiencies covered in General Accounting Office (GAO) Reports; (4) funds for contract support to assist the Nuclear, Biological, Chemical (NBC) Defense Joint Service Integration Group in accomplishing its new mission to "Survey the Commanders-in-Chief (CINCs) and Services to provide a database of current and planned NBC Defense studies, analyses, models and simulations, training, exercises, and wargames; to determine overlaps, duplication, and shortfalls; and to build and execute programs to correct shortfalls in all aspects of NBC Defense"; (5) provides funds to establish the JSIG lead in NBC Defense Modeling, Simulation, and Analysis (MSA) and determines NBC Defense MSA requirements. Program funding initiated in FY99 as part of the Secretary of Defense's Quadrennial Defense Review enhancements for counterproliferation programs.

FY 1999 Accomplishments:

- 813 JSIG Doctrine and Training (DT) - Prepared Multi-Service Doctrine for development of Joint NBC Defense Systems [e.g., Joint Warning and Reporting Network (JWARN), Joint Chemical Agent Detector (JCAD), Joint Service Lightweight Stand-off Chemical Agent Detector (JSLSCAD), Joint Biological Point Detection System (JBPDS)]; updated existing Joint doctrinal and multi-Service NBC Defense products; and reviewed all Joint publications to ensure that NBC is addressed.
- 1050 JSIG DT - Corrected Joint NBC Defense training and doctrine deficiencies resulting from General Accounting Office (GAO) Reports, the Army Chemical School Training Action Plan and other sources. Additionally, results of the FY98 Joint Chief's of Staff (JCS) Training, Studies, and Analysis effort to "Survey the CINCs NBC Defense efforts and Programs in the NBC Defense Area" provided further program definition.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **6 - Management Support**	PE NUMBER AND TITLE **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**
	PROJECT **DT6**

FY 1999 Accomplishments (Cont):

- 50 JSIG DT - Enhanced Joint participation in the Joint Senior Leader's Course, conducted three times annually. Increased support of presentations by high-level DoD and other government agency (OGA) experts in NBC Defense. Enhanced course conduct, including training at the live-agent Chemical Defense Training Facility (CDTF), and travel/per-diem for students from all Services.
- 1144 Modeling and Simulation (MODSIM) - Supported the Services in NBC Defense Modeling, Simulation, and Analysis; continued to establish requirements for NBC Defense Models and Simulations; and improved commonality in the DoD NBC Defense Modeling and Simulation community.

Total 3057

FY 2000 Planned Program:

- 1656 JSIG Doctrine and Training (DT) - Support development of medical, non-medical and special operations Multi-Service core NBC doctrine. Implement recommendations provided in the NBC Defense Doctrine and Training Assessment. Also, provides Service support to implement doctrine and training initiatives.
- 50 JSIG DT - Support additional joint participation in the Joint Senior Leader's Course (JSLC).
- 422 JSIG DT - Conduct Phase II of CB defense requirements study; analysis of the Air Force's material requirements determination process.
- 1163 MODSIM - Support the Services development of joint modeling, simulation, and analysis requirements through the JSIG Modeling and Simulation Requirements Panel.
- 48 SBIR/STTR.

Total 3339

FY 2001 Planned Program:

- 1564 JSIG Doctrine and Training (DT) - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine. Implement recommendations provided in the NBC Defense Doctrine and Training Assessment. Also, provide Service support to implement doctrine and training initiatives.
- 50 JSIG DT - Continue to support additional joint participation in the Joint Senior Leader's Course (JSLC).
- 450 JSIG DT - Conduct Phase III of CB defense requirements study; analysis of the Marine Corps material requirements determination process.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	DT6

FY 2001 Planned Program (Cont):

- 1168 MODSIM - Continue to support the Services development of joint modeling, simulation, and analysis requirements through the JSIG Modeling and Simulation Requirements Panel.

Total 3232

B. Other Program Funding Summary: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)

PROJECT
DW6

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DW6 DUGWAY PROVING GROUND	9983	10065	10121	10383	10668	10207	10511	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project DW6 DUGWAY PROVING GROUND: Project provides a technical capability for testing Department of Defense (DoD) Chemical and Biological Defense materiel, equipment and systems from concept through production. It finances indirect test operating costs not billable to test customers, to include indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

DPG, a Major Range and Test Facility Base (MRTFB), is the reliance center for all DoD chemical/biological defense (CBD) testing and provides the United States' only combined range, chamber, toxic chemical lab, and bio-safety level 3 facility.

DPG uses state-of-the-art chemical and life sciences test facilities and test chambers to perform CBD testing of protective gear, decontamination systems, detectors and equipment while totally containing chemical agents and biological pathogens.

Projects programmed for testing at DPG include: Joint Services Lightweight Standoff Chemical Agent Detector (JSLSCAD), Joint Field Trials (JFT), Joint Biological Remote Early Warning System (JBREWS), Joint Service Biological Point Detection System (JBPDS), Joint Chemical Agent Detector (JCAD), and Joint Services Lightweight Integrated Suit Technology (JSLIST).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**	**DW6**

FY 1999 Accomplishments:

- 6478 Provided for labor and supporting costs of civilian personnel performing administration and staff support for Dugway Proving Ground's (DPG's) Chemical/Biological (CB) test mission. This indirect support includes budget, surety operations, range control, Contracting Officer Representative (COR) duties and environmental oversight which cannot be directly identified to a specific customer.
- 2960 Provided for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by indirect funds; the balance is recouped from customers.
- 545 Provided for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility and the Life Science Test Facility).

Total 9983

FY 2000 Planned Program:

- 6896 Provides for labor and supporting costs of civilian personnel performing administration and staff support for DPG's Chemical/Biological (CB) test mission. This indirect support includes budget, surety operations, range control, COR duties and environmental oversight which cannot be directly identified to a specific customer.
- 2470 Provides for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by indirect funds; the balance is recouped from customers.
- 553 Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility and the Life Science Test Facility).
- 146 SBIR/STTR.

Total 10065

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DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**	**DW6**

FY 2001 Planned Program:

- 6152 Provides for labor and supporting costs of civilian personnel performing administration and staff support for DPG's Chemical/Biological test mission. This indirect support includes budget, surety operations, range control, COR duties and environmental oversight which cannot be directly identified to a specific customer.
- 3398 Provides for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by indirect funds; the balance is recouped from customers.
- 571 Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility and the Life Science Test Facility).

Total 10121

B. <u>Other Program Funding Summary:</u> N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**	**MS6**

COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
MS6 MANAGEMENT SUPPORT	7619	9090	8565	8710	8817	8869	9085	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project MS6 MANAGEMENT SUPPORT: This project provides management support for the Department of Defense (DoD) Joint Service Nuclear, Biological and Chemical (NBC) defense program. It includes program oversight and integration of overall medical and non-medical programs by the Office of the Secretary of Defense (OSD) NBC Defense Steering Committee, which is composed of the Director, Defense Research and Engineering (DDR&E), the Director, Defense Threat Reduction Agency (DTRA), the Director of DTRA Chemical/Biological (CB) Defense Directorate, the Deputy Assistant to the Secretary of Defense for CB Defense (DATSD (CBD)), and the Deputy Director for Strategy & Policy, J-5; funds execution management by DTRA; integration of joint requirements, training and doctrine by the Joint Service Integration Group (JSIG); joint research, development and acquisition (RDA) planning, input to the NBC Defense Annual Report to Congress and Program Objectives Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); and review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat. It also includes programming support for the Joint Service Chemical Biological Information System (JSCBIS), which serves as a budgetary and informational database for the DoD Chemical/Biological Defense Program. Funding is also provided for the Chemical Biological Archive Information Management System (CBAIMS) as a means to collect, assemble, catalog and archive Chemical and Biological Defense information from multiple service locations into a central repository and library.

FY 1999 Accomplishments:

- 300 Joint Forces in a Contaminated Environment (JFICE) - Initiated evaluation of WMD impact on Joint Force abilities to survive, operate and sustain force projection operations.
- 2036 JSIG MGT - Developed Joint Requirements and conducted milestone reviews. Established the Medical Program Sub-Panel to develop and prioritize Joint Medical requirements. Initiated Joint System Training Plan and multi-Service doctrine update processes. Conducted the annual update of the Joint Modernization Plan, the medical and non-medical Joint Priority Lists, and the Annual Report to Congress. Developed the Joint Service Requirements Integration Process.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	**0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**	**MS6**

FY 1999 Accomplishments (Cont):

- 2680 JSMG MGT - Developed assessments to support Research, Development and Acquisition (RDA) Plan. Provided analytic programmatic support for development of Program Objectives Memorandum (POM) Strategy, the Budget Estimate Submission (BES), and the President's Budget (PB) request. Responded to specialized evaluation studies throughout the Program, Planning and Budget System (PPBS) process.
- 2422 OSD MGT - Performed program reviews/assessments, provided programmatic PPBS oversight/analysis, provided congressional issue analysis and support. Provided financial management services by the Defense Threat Reduction Agency in the areas of funding distribution and execution reporting.
- 181 OSD MGT - Provided Joint Service Chemical and Biological Information System (JSCBIS) database support.

Total 7619

FY 2000 Planned Program:

- 493 CBAIMS - Archiving of Chemical and Biological information from multiple service locations.
- 117 JNBCDB MGT - Provide Joint Nuclear, Biological, and Chemical Defense Board (JNBCDB) oversight and analysis for PPBS process.
- 2652 JSIG MGT - Develop Joint Requirements and conduct milestone reviews. Develop medical Joint Future Operational Capabilities (JFOC) and integrate with updated non-medical JFOCs. Establish Joint Training Working Group and Models and Simulations Requirements Panel to develop non-material requirements. Conduct annual review and update of Joint Modernization Plan, the integrated medical and non-medical Joint Priority List, the JFOCs and the Annual Report to Congress.
- 2900 JSMG MGT - Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the Budget Estimate Submission (BES), and the President's Budget (PB) request. Respond to specialized evaluation studies throughout the PPBS process.
- 190 OSD MGT - Provided JSCBIS database support.
- 2606 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS oversight/analysis, provide congressional issue analysis and support. Supports financial management services provided by the Defense Threat Reduction Agency such as funding distribution and execution reporting.
- 132 SBIR/STTR.

Total 9090

FY 2001 Planned Program:

- 397 CBAIMS - Support archiving of Chemical and Biological information.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	MS6

FY 2001 Planned Program (Cont):

- 190 JNBCDB MGT - Provide Joint Nuclear, Biological and Chemical Defense Board (JNBCDB) oversight and analysis for PPBS process.
- 2663 JSIG MGT - Develop Joint Requirements and conduct milestone reviews. Conduct annual review and update of Joint Modernization Plan, the integrated medical and non-medical Joint Priority List, the JFOCs and the Annual Report to Congress.
- 3075 JSMG MGT - Develop assessments to support Research, Development and Acquisition (RDA) Planning. Provide analytic programmatic support for development of Program Objectives Memorandum (POM) Strategy, the Budget Estimate Submission (BES), and the President's Budget (PB) request. Respond to specialized evaluation studies throughout the PPBS process.
- 2046 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS oversight/analysis, provide congressional issue analysis and support. Supports financial management services provided by the Defense Threat Reduction Agency such as funding distribution and execution reporting.
- 194 OSD MGT - Provide Joint Service Chemical and Biological Information System (JSCBIS) database support.

Total 8565

B. <u>Other Program Funding Summary:</u> N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)

PROJECT
O49

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
O49	JOINT POINT TEST	1599	1587	1531	1671	1723	1738	1790	Continuing	Continuing

A. Mission Description and Budget Item Justification:

Project O49 JOINT POINT TEST: The objectives of the Joint Point Test program are to plan, conduct, evaluate, and report on joint tests (for other than developmental hardware) and accomplish operational research assessments in response to requirements received from the Commanders-in-Chief (CINCs) and the Services. This program will provide ongoing input to the CINC's and Services for development of doctrine, policy, training procedures, and feedback into the Research, Development, Testing & Evaluation (RDT&E) cycle.

FY 1999 Accomplishments:

- 633 Conducted assessments evaluating performance and procedures in a chemical environment. Efforts addressed exterior decontamination of Army Aircraft, Vapor and Contact Hazards from Chemical Warfare (CW) Agent Contamination, Clothing Decontamination, Over-land Atmospheric Dispersion of CB Agent and Water Support in a Toxic environment.
- 647 Conducted field trials evaluating performance and procedures in a chemical environment. Field trials included Cargo Aircraft Contamination Control test and Air-Platform Interface Issues
- 319 Conducted laboratory tests evaluating performance and procedures in a chemical environment. Laboratory tests included Critical Area decontamination of Biological Agents and Chemical Agent simulant testing.

Total 1599

FY 2000 Planned Program:

- 614 Conduct assessments evaluating performance and procedures in a chemical environment. Efforts initiated will address field laundry aeration for JSLIST garment, mitigation of CW/BW effect on unprotected civilians during noncombatant operations and effects of chemical warfare on airbase operations and impact of sortie generation.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE FEBRUARY 2000
BUDGET ACTIVITY **6 - Management Support**	PE NUMBER AND TITLE **0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)**
	PROJECT **O49**

FY 2000 Planned Program (Cont):

- 634 Conduct field trials evaluating performance and procedures in a chemical environment. Field tests to be initiated are CW impact on Sea Ports of Debarkation and VX Chemical Agent Simulant performance.
- 316 Conduct laboratory tests evaluating performance and procedures in a chemical environment. Laboratory testing initiated will support the Sea Ports of Debarkation field testing and field laundry aeration assessment for JSLIST garment.
- 23 SBIR/STTR.

Total 1587

FY 2001 Planned Program:

- 591 Conduct assessments evaluating performance and procedures in a chemical environment. Planned efforts are to address decontamination of strategic and tactical aircraft, casualty decontamination procedures and noncombatant evacuation operation respiratory protection.
- 640 Conduct field trials evaluating performance and procedures in a chemical environment. Field trials planned are effectiveness of transload operations, noncombatant evacuation operations and cargo aircraft contamination control.
- 300 Conduct laboratory tests evaluating performance and procedures in a chemical environment. Laboratory tests planned are protective mask fit factor for BW, noncombatant evacuation operations materiel support and industrial hygiene equipment evaluation.

Total 1531

B. <u>Other Program Funding Summary:</u> N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	5638	0	0	0	0	0	0	0	5638
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5638	0	0	0	0	0	0	0	5638

A. Mission Description and Budget Item Justification: The overall objective of the Chemical/Biological Defense (CBD) SBIR program is to improve the transition or transfer of innovative CBD technologies between Department of Defense (DoD) components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: **FEBRUARY 2000**

BUDGET ACTIVITY: **6 - Management Support**

PE NUMBER AND TITLE: **0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)**

B. Program Change Summary:	**FY 1999**	**FY 2000**	**FY 2001**
Previous President's Budget (FY 2000/FY 2001)	0	0	0
Appropriated Value	0	0	
Adjustment to Appropriated Value			
a. Congressional General Reductions			
b. SBIR/STTR	5638		
c. Omnibus or Other Above Threshold Reductions			
d. Below Threshold Reprogramming			
e. Rescissions			
Adjustments to Budget Years Since FY 2000/2001 PRES BUD			0
Current Budget Submit (FY2001/PRES BUD)	5638	0	0

Change Summary Explanation:

Funding:

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY
6 - Management Support

PE NUMBER AND TITLE
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

PROJECT **SB6**

COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
SB6	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	5638	0	0	0	0	0	0	0	5638

A. Mission Description and Budget Item Justification:

Project SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR): The SBIR Program is a Congressionally mandated program established to increase the participation of small business in federal research and development (R&D). Currently, each participating government agency must reserve 2.5% of its extramural R&D for SBIR awards to competing small businesses. The goal of the SBIR Program is to invest in the innovative capabilities of the small business community to help meet government R&D objectives while allowing small companies to develop technologies and products which they can then commercialize through sales back to the government or in the private sector.

The Small Business Technology Transfer (STTR) Program like SBIR, is a government-wide program, mandated by the Small Business Research and Development Enhancement Act of 1992, PL 102-564. STTR was established in FY94 as a three-year pilot program. In early 1996, the General Accounting Office conducted a comprehensive review of the Government-wide STTR Program to determine the effectiveness of the pilot program. Upon review of the GAO report, Congress voted to reauthorize the STTR Program to the year 2000, consistent with the authorization period for the SBIR Program.

STTR was established as a companion program to the SBIR Program and is executed in essentially the same manner; however there are several distinct differences. The STTR Program provides a mechanism for participation by university, federally-funded research and development centers (FFRDCs), and other non-profit research institutions. Specifically, the STTR Program is designed to provide an incentive for small companies and research at academic institutions and non-profit research and development institutions to work together to move emerging technical ideas from the laboratory to the marketplace to foster high-tech economic development and to advance U.S. economic competitiveness. Each STTR proposal must be submitted by a team which includes a small business (as the prime contractor for contracting purposes) and at least one research institution, which have entered into a Cooperative Research and Development Agreement for the purposes of the STTR effort. Furthermore, the project must be divide up such that the small business performs at least 40% of the work and the research institution(s) performs at least 30% of the work. The remainder of the work may be performed by either party or a third party. The budget is separate from the SBIR budget and is significantly smaller (0.15% of the extramural R&D budget vs. 2.5% for the SBIR Program).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **FEBRUARY 2000**

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management Support	**0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)**	**SB6**

The Department of Defense (DoD) has consolidated management and oversight of the Chemical and Biological Defense (CBD) program into a single office within the Office of the Secretary of Defense (OSD). The Army was designated as the Executive Agent for coordination and integration of the CBD program. The executive agent for the SBIR/STTR portion of the program is the Army Research Office-Washington.

The overall objective of the CBD SBIR/STTR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

FY 1999 Accomplishments:

- 5638 SBIR - Conducted Chemical and Biological Defense SBIR research and development efforts.

Total 5638

FY 2000 Planned Program: No planned program

FY 2001 Planned Program: No planned program

B. <u>Other Program Funding Summary:</u> N/A

DEFENSE INFORMATION SYSTEMS AGENCY (DISA)
INTRODUCTION AND EXPLANATION OF CONTENTS

1. General. This document provides summary information on RDT&E programs for the Defense Information Systems Agency Research, Development, Test and Evaluation program elements and projects in the Amended FY 2001 Budget. The R-2, R-2a, and R-3 exhibits provide narrative information on all RDT&E program elements and projects.

2. Comparison of FY 1999 and FY 2000 Data. A direct comparison of FY 1999 and FY 2000 data in the R-1 exhibit dated February 1999 will reveal only changes reflecting below threshold reprogrammings and Congressional action on the appropriation request.

3. Relationship of FY 2001 Budget Structure to the FY 2000 Budget Approved by Congress. The following program elements appear with funding beginning in FY 2001:

Budget Activity 5: Engineering and Manufacturing Development

0303129K Defense Message System
0303140K Information Systems Security Program
0303141K Global Combat Support System
0305840K Electronic Commerce

NOTE: These programs are not new starts nor do they reflect unexpected program growth. Beginning in FY 2001, funding has been realigned from the O&M to the RDT&E appropriation due to Congressional (HAC) direction and subsequent Departmental guidance regarding Information Technology budgeting.

4. Classification. All exhibits in this document are unclassified.

DEFENSE INFORMATION SYSTEMS AGENCY
AMENDED FY 2001 BIENNIAL BUDGET ESTIMATE
R-1 EXHIBIT

Program Element	FY 1999	FY 2000	FY 2001
0305108K C2 Research	1,943	1,953	0
Total Applied Research (BA 2)	1,943	1,953	0
0303129K Defense Message System (DMS)	0	0	11,340
0303140K Information Systems Security Program (ISSP)	0	0	18,210
0303141K Global Combat Support System (GCSS)	0	0	22,287
0305840K Electronic Commerce (EC)	0	0	28,094
0604764K Advanced IT Services Joint Program Office	15,109	14,370	14,685
Total Engineering & Manufacturing Development (BA 5)	15,109	14,370	94,616
0605801K Defense Technical Information Services	45,040	45,495	45,350
Total RDT&E Management Support (BA 6)	45,040	45,495	45,350
0208045K C3 Interoperability	29,080	23,629	37,072
0302016K NMCS-Wide Support	642	608	641
0302019K Defense Info. Infras.(DII) Engin. & Integ.	5,584	3,421	5,704
0303126K Long Haul Communications	11,469	1,306	1,416
0303127K Support of the Nat. Comm. Sys. (NCS)	4,386	4,242	5,019
0303131K Min. Essen. Emerg. Comm. Netw. (MEECN)	4,367	5,270	7,099
0303149K C4I for the Warrior	3,407	385	405
0303153K Joint Spectrum Center	8,756	8,757	8,735
Total Operational System Develop. (BA 7)	67,691	47,618	66,091
TOTAL DISA RDT&E	129,783	109,436	206,057

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/02					**R-1 ITEM NOMENCLATURE** C2 Research/P.E. 0305108K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Command and Control Research/A10		1.943	1.953	0	0	0	0	0	0	3.896

A. Mission Description and Budget Item Justification:

This program element represents DISA's portion of a joint DISA/multi-service effort that supports research into emerging technologies, methodologies, and theories of military command and control (C2), the application of research results to resolve the problems of C2 associated with joint and coalition operations and the optimal use of MILDEP laboratory resources. Accordingly, this program element is located in Budget Activity 02. The C2 research program was initiated to develop C2 as a scientific discipline; foster joint service techbase cooperation; and develop a better understanding of the national security implications of the information age, particularly with respect to the development and use of information superiority in support of future operational concepts. The program supports the conduct and dissemination of C2 basic and applied research. Initiatives focus on high level issues in C2 and the development of related educational materials for DOD personnel. Joint techbase issues are addressed including those related to network centric warfare, information superiority, integration of a system of systems, command decision making and supporting processes, and Joint and Coalition C2.

FY 1999 Accomplishments:

- Continued Basic and Applied Research Initiatives in Command and Control. (2nd Qtr - 4th Qtr) ($970K)
- Continued Development of C2 Research Infrastructure. (1st Qtr - 4th Qtr) ($400K)
- Continued C2 Community Building and Cooperation Initiatives. (1st Qtr – 3rd Qtr) ($325K)
- Continued Dissemination of Research Findings and Educational Initiatives. (1st Qtr – 4th Qtr) ($248K)

- Total $1.943M

Exhibit R-2, RDT&E Budget Item Justification										**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/02					**R-1 ITEM NOMENCLATURE** C2 Research/P.E. 0305108K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Command and Control Research/A10		1.943	1.953	0	0	0	0	0	0	3.896

FY 2000 Plans:
- Continue Basic and Applied Research Initiatives in Command and Control. (2nd Qtr - 4th Qtr) ($975K)
- Continue Development of C2 Research Infrastructure. (1st Qtr - 4th Qtr) ($400K)
- Continue C2 Community Building and Cooperation Initiatives. (1st Qtr – 3rd Qtr) ($330K)
- Continue Dissemination of Research Findings and Educational Initiatives. (1st Qtr – 4th Qtr) ($248K)

- Total $1.953M

FY 2001 Plans:
Funding eliminated due to higher priority Departmental initiatives.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/02					**R-1 ITEM NOMENCLATURE** C2 Research/P.E. 0305108K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Command and Control Research/A10		1.943	1.953	0	0	0	0	0	0	3.896

B. Program Change Summary:

	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000)	1.955	1.968	2.015
Appropriated Value	1.961	1.968	
Adjustments to Appropriated Value	-.018	-.009	
Congressional Rescission		-.006	
Adjustments to Budget Year Since FY 2000 President's Budget			-2.015
Current Budget Submit/President's Budget (FY 2001)	1.943	1.953	0

Change Summary Explanation:
Funding: FY 1999 changes due to undistributed congressional adjustments to Defense-wide RDT&E Appropriation and below threshold reprogramming.
FY 2000 changes due to Government-wide rescission and below threshold reprogramming.
FY 2001 funding eliminated due to higher priority Departmental initiatives.

C. Other Program Funding Summary: N/A

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Defense Message System (DMS)/P.E. 0303129K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Defense Message System/DM01		0	0	11.340*	11.764	12.160	14.761	15.138	Contg	Contg

A. Mission Description & Budget Item Justification:
The Defense Message System (DMS) is the Warfighter's Message System. The DMS was established in response to Joint Staff validated messaging requirements which establish the need for writer-to-reader messaging service that is accessible from world wide Department of Defense (DOD) locations, by tactically deployed users, and other designated Federal Government users, with interfaces to Allied users and Defense Contractors. As a value-added service of the Defense Information Infrastructure (DII), the DMS incorporates state-of-the-art messaging, directory, security, and management technologies to provide those capabilities needed to support the DII objective goals. In FY01, DMS will deliver Release 3.1 with enhanced capabilities, to include lessons learned, Tactical Unique requirements, Intel Community requirements (remaining Priority 1, schema, shadowing refinements, Priorities 2), Allied Communication Protocol (ACP) 120 enhancements, Tools evolution, routing regional management, commercial refresh and common operating environment for servers. DMS will also start build of Release 4.0 in FY01. This program element is under Budget Activity 5 because it involves the development of major upgrades that increase the performance of existing systems. The remaining portion of the DMS RDT&E budget for FY01 is within PE 0303140K. This is not duplication of effort.

* This project is not a new start nor does it reflect unexpected program growth. Beginning in FY 2001, funding has been realigned from the O&M to the RDT&E appropriation due to Congressional (HAC) direction and subsequent Departmental guidance regarding Information Technology budgeting.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Defense Message System (DMS)/P.E. 0303129K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Defense Message System/DM01		0	0	11.340	11.764	12.160	14.761	15.138	Contg	Contg

FY2001 Plan

o Test & Field Release 3.0. The DMS program will test Release 3.0 followed by an Operational Test and fielding. DMS implements and fields system capabilities through a series of coordinated product releases. Release 3.0 provides classified organizational messaging through Top Secret/Special Compartmented Information (SCI). (1^{st} – 2^{nd} Qtr, $2.000M)

o Deliver Release 3.1. Release 3.1 will incorporate additional unique capabilities identified by the Intelligence Community (IC) and new functionality to support DMS operation in a Tactical environment. (1^{st} - 2^{nd} Qtr, $6.050M)

o Release 3.1 Operational Assessment/Test. DMS Release 3.1 will undergo either an Operational Assessment or an Operational Test (Sep 01), in accordance with the approved DMS Revised Capstone Test and Master Plan (TEMP), dtd July 1999. (2^{nd} - 3^{rd} Qtr, $1.590M)

o Expand Medium Grade Service (MGS). DMS will expand the MGS operational base. MGS is a managed set of Commercial Off-The-Shelf (COTS) e-mail products, that utilize the DOD Medium Assurance Public Key Infrastructure (PKI). As a subset of DMS, MGS represents a set of Internet standards agreed to by government and industry. (2^{nd} Qtr, $1.200M)

o Start Release 4.0. Initial development of DMS Release 4.0 will begin. This Release will focus on Allied Interoperability and the ultimate convergence of the X.400/Allied Communication Protocol 120 (ACP 120) standards suite with Secure Multipurpose Internet Mail Extension (S/MIME) V3 and Enhanced Simple Mail Transfer Protocol (SMTP). Allied interoperability may include mechanisms such as Protected Content Type (PCT) and implementation of cryptographic gateways. (3^{rd} - 4^{th} Qtr, $.500M)

o Total $11.340M

Exhibit R-2, RDT&E Budget Item Justification | **DATE:** February 2000

APPROPRIATION/BUDGET ACTIVITY
RDT&E, Defense-Wide/05

R-1 ITEM NOMENCLATURE
Defense Message System (DMS)/P.E. 0303129K

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Defense Message System/DM01		0	0	11.340	11.764	12.160	14.761	15.138	Contg	Contg

B. Program Change Summary:

	FY99	FY00	FY01
Previous Presidents Budget (FY2000)			0
Appropriated Value			
Adjustments to Appropriated Value			
Adjustments to Budget Year Since FY2000 President's Budget			11.340
Current Budget Submit/President's Budget (FY2001)	*	*	11.340

Change Summary Explanation:
FY2001 initialization is due to Congressional direction converting O&M to RDT&E appropriation.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To complete
Operation & Maintenance:	41.819	25.731	8.340	8.284	8.191	6.062	6.158	Contg
Procurement:	41.733	28.047	19.399	19.679	20.031	20.495	20.954	Contg

E. Acquisition Strategy: DMS Contract, Lockheed Martin Corporation (LMC) provides for the design, development, deployment, implementation and maintenance of DMS. Booz Allen Hamilton (BAH) provides for implementation, tactical deployment, configuration management and logistics support. Unisys/PRC/SRA provide for the development and integration of Medium Grade Messaging Service (MGS). J.G. VanDyke provides site implementation support and site technical assistance. Data Systems Analyst (DSA) provides system and software engineering support, to include implementation engineering, tactical integration, service management system integration support, and Top Secret Collateral support.

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Defense Message System (DMS)/P.E. 0303129K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Defense Message System/DM01		0	0	11.340	11.764	12.160	14.761	15.138	Contg	Contg

E. Schedule Profile:

FY2001:
1st Qtr:
o Deliver Release 3.1 Tactical/Unique Capabilities
2nd Qtr:
o Release 2.2 Organizational Messaging Enhancements – Complete Deployment
o Release 3.0 Complete Operational Test
o Release 3.1 Operational Assessment/Operational Test
o Expand Medium Grade Service (MGS)
3rd Qtr:
o Begin Release 4.0
4th Qtr:
o Release 3.0 Complete Deployment

FY2002 – FY2005
1st – 4th Qtr
o Continue Intel Implementation
o Provide Emergency Action Message (EAM)/Critical Intelligence Communication (CRITIC) gateways
o Continuing commercial convergence of products, including Public Key Infrastructure (PKI), Defense Information Infrastructure (DII)/Directory, Commercial Off-The-Shelf (COTS) Standards (Secure Multipurpose Internet Mail Extension (S/MIME), Medium Grade Service, Lightweight Directory Access Protocol (LDAP))
o UNIX to NT migration completed
o Provide Allied interface gateways
o Provide Public Key Infrastructure gateways
o Close DMS Transition Hubs

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Defense Message System (DMS)/PE 0303129K	**PROJECT NAME AND NUMBER** Defense Message System/DM01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development										
Systems Engineering and Integration	CPFF, FFP/ Comp	Lockheed Martin Company Manassas, VA	0	0	N/A	4.186	5/01	Contg	Contg	4.186
Modeling and Simulation	MIPR	DISA	0	0	N/A	0.255	10/00	Contg	Contg	0.255
Systems Integration	CPFF/ Comp	UNISYS, Arlington, VA	0	0	N/A	1.300	2/01	Contg	Contg	1.300
System Engineering	CPAF/ SS	Data Systems Analysts Fairfax, VA	0	0	N/A	1.200	4/01	Contg	Contg	1.200
	FFRDC	MITRE, Arlington, VA	0	0	N/A	0.720	10/00	Contg	Contg	0.720
	MIPR/ ARMY	Executive Agent - Tactical Switch Systems	0	0	N/A	0.200	10/00	Contg	Contg	0.200
	CPFF/ Comp	Booz, Allen & Hamilton, McLean, VA	0	0	N/A	0.665	11/00	Contg	Contg	0.665
	CPFF/ SS	JG Van Dyke, Alexandria, VA	0	0	N/A	0.424	1/01	Contg	Contg	0.424
Subtotal Product Development						8.950				

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Defense Message System (DMS)/PE 0303129K	**PROJECT NAME AND NUMBER** Defense Message System/DM01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation										
Developmental Test and Evaluation	MIPR	Joint Interoperability Test Command, Ft Huachuca, AZ	0	0	N/A	1.694	10/00	Contg	Contg	1.694
	CPAF/ SS	Data Systems Analysts Fairfax, VA	0	0	N/A	0.454	4/01	Contg	Contg	0.454
Integration Testing	MIPR	Joint Interoperability Test Command, Ft Huachuca, AZ	0	0	N/A	0.242	10/00	Contg	Contg	0.242
Subtotal Test and Evaluation						2.390				
TOTAL						11.340				

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Information Systems Security Program (ISSP)/P.E. 0303140K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Information Systems Security Program/IA01		0	0	18.210*	12.016	12.901	12.886	12.869	Contg	Contg

A. Mission Description & Budget Item Justification:
The purpose of the Information Systems Security Program (ISSP) is to plan, integrate, acquire, implement and support full spectrum, interoperable products, services, and processes in support of CINCs/Services/Agencies and the National Security Objectives. The ISSP also provides leadership for the creation of the technical Information Assurance (IA) framework for the DOD and conducts technical network and system defense. The RDT&E portion of the ISSP budget focuses on the security aspects of DMS. These funds in PE 0303140K are not duplicative of work being done under PE 0303129K. In FY01, DMS will deliver Release 3.1 with enhanced capabilities, to include lessons learned, Tactical Unique requirements, Intel Community requirements (remaining Priority 1, schema, shadowing refinements, Priorities 2), Allied Communication Protocol (ACP) 120 enhancements, Tools evolution, routing regional management, commercial refresh and common operating environment for servers. DMS will also start build of Release 4.0 in FY01. This program element is under Budget Activity 5 because it involves the development of major upgrades that increase the performance of existing systems.

* This project is not a new start nor does it reflect unexpected program growth. Beginning in FY 2001, funding has been realigned from the O&M to the RDT&E appropriation due to Congressional (HAC) direction and subsequent Departmental guidance regarding Information Technology budgeting.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Information Systems Security Program (ISSP)/P.E. 0303140K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Information Systems Security Program/IA01		0	0	18.210	12.016	12.901	12.886	12.869	Contg	Contg

FY2001 Plan

o Test & Field Release 3.0. The DMS program will test Release 3.0 followed by an Operational Test of the ISSP security specific aspects of DMS. DMS implements and fields system capabilities through a series of coordinated product releases. Release 3.0 provides classified organizational messaging through Top Secret/Secret Compartmented Information (SCI). (1^{st} – 2^{nd} Qtr, $.968M)

o Deliver Release 3.1. Release 3.1 will incorporate additional unique ISSP security specific capabilities identified by the Intelligence Community (IC) and new functionality to support DMS operation in a Tactical environment. (1^{st} – 2^{nd} Qtr, $13.500M)

o Release 3.1 Operational Testing (OT). DMS Release 3.1 will undergo either an Operational Assessment or an Operational Test of the ISSP security specific aspects of the release in accordance with the approved DMS Revised Capstone Test and Master Plan (TEMP), dtd., July 99. (2^{nd} – 3^{rd} Qtr, $.653M)

o Expand Medium Grade Service (MGS). DMS will expand the ISSP security specific aspects of the MGS operational base. MGS is a managed set of Commercial Off-The-Shelf (COTS) e-mail products, that utilize the DOD Medium Assurance Public Key Infrastructure (PKI). As a subset of the DMS, MGS represents a set of Internet standards agreed to by government and industry. (2^{nd} Qtr, $2.000M)

o Start Release 4.0. Initial development of the ISSP security specific aspects of DMS Release 4.0 will begin. This Release will focus on Allied Interoperability and the ultimate convergence of the X.400/Allied Communication Protocol (ACP) 120 standards suite with Secure Multipurpose Internet Mail Extension (S/MIME) V3 and Enhanced Simple Mail Transfer Protocol (SMTP). Allied interoperability may include mechanisms such as Protected Content Type (PCT) and implementation of cryptographic gateways. (3^{rd} – 4^{th} Qtr, $1.089M)

o Total $18.210M

Exhibit R-2, RDT&E Budget Item Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Information Systems Security Program (ISSP)/P.E. 0303140K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Information Systems Security Program/IA01		0	0	18.210	12.016	12.901	12.886	12.869	Contg	Contg

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY2000)			0
Appropriated Value			
Adjustments to Appropriated Value			
Adjustments to Budget Year Since FY2000 President's Budget			18.210
Current Budget Submit/President's Budget (FY2001)	*	*	18.210

Change Summary Explanation:
FY2001 initialization is due to Congressional direction converting O&M to RDT&E appropriation.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete
Operations & Maintenance:	87.783	118.476	128.646	133.707	134.706	136.045	136.027	Contg
Procurement:	17.507	18.620	26.655	30.461	24.072	13.458	14.969	Contg

D. Acquisition Strategy: The DMS Contract, Lockheed Martin Corporation (LMC), for the design, and development of DMS; PRC for the development and integration of Medium Grade Messaging Service (MGS); NSA for the development of security products and the conduct of ST&E (Security Test & Evaluation); and the Joint Interoperability Test Command (JITC) for planning and conducting operational testing.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Information Systems Security Program (ISSP)/P.E. 0303140K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Information Systems Security Program/IA01		0	0	18.210	12.016	12.901	12.886	12.869	Contg	Contg

E. Schedule Profile:

FY2001:
1st Qtr:
o Deliver Release 3.1 Tactical/Unique Capabilities
2nd Qtr:
o Release 2.2 Organizational Messaging Enhancements – Complete Deployment
o Release 3.0 Complete Operational Test
o Release 3.1 Operational Assessment/Operational Test
o Expand Medium Grade Service (MGS)
3rd Qtr:
o Begin Release 4.0
4th Qtr:
o Release 3.0 Complete Deployment

FY2002 – FY2005
1st – 4th Qtr
o Continue Intel Implementation
o Provide Emergency Action Message (EAM)/Critical Intelligence Communication (CRITIC) gateways
o Continuing commercial convergence of products, including Public Key Infrastructure (PKI), Defense Information Infrastructure (DII)/Directory, Commercial Off-The-Shelf (COTS) Standards (Secure Multipurpose Internet Mail Extension (S/MIME), Medium Grade Service, Lightweight Directory Access Protocol (LDAP))
o UNIX to NT migration completed
o Provide Allied interface gateways
o Provide Public Key Infrastructure gateways
o Close DMS Transition Hubs

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Information Systems Security Program (ISSP) PE 0303140K	**PROJECT NAME AND NUMBER** Information Systems Security Program/IA01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development										
Systems Engineering and Integration	CPFF, FFP/ Comp	Lockheed Martin Company, Manassas, VA	0	0	N/A	14.589	5/01	Contg	Contg	14.589
Systems Integration	CPFF/ Comp	UNISYS, Arlington, VA	0	0	N/A	2.000	2/01	Contg	Contg	2.000
Subtotal Product Development						16.589				
Test and Evaluation										
Operational Test and Evaluation	MIPR	Joint Interoperability Test Command, Ft Huachuca, AZ	0	0	N/A	0.786	10/00	Contg	Contg	0.786
Security Test and Evaluation	MIPR	DISA	0	0	N/A	0.425	10/00	Contg	Contg	0.425
	MIPR	National Security Agency, Lantham, MD	0	0	N/A	0.410	10/00	Contg	Contg	0.410
Subtotal Test and Evaluation						1.621				
TOTAL						18.210				

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Global Combat Support System (GCSS)/P.E. 0303141K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Global Combat Support System/CS01		0	0	22.287*	20.081	20.840	21.337	22.048	Contg	Contg

A. Mission Description & Budget Item Justification: The Global Combat Support System (GCSS) provides a strategy for achieving information interoperability across combat support functions, and between combat support and C2 functions. The DISA components of GCSS are focused on providing integrated combat support information to improve the CINC/Joint Task Force (JTF) level decision-making process. DISA provides the following three components: (1) Common Operational Picture-Combat Support Enhanced (COP-CSE), which provides map-based visualization capabilities; (2) GCSS Portal, which provides web based query capabilities; and (3) Combat Support Data Environment (CSDE) which provides a common access mechanism to heterogeneous data sources. In FY 1999 DISA fielded these three components to Pacific Command (PACOM), U.S. Forces, Korea (USFK), Alaska Command (ALCOM), and the Logistics Readiness Center within the National Military Command Center (NMCC). The version fielded to the NMCC included additional capabilities required to support the ongoing Kosovo Operations. All components were tested and received Y2K certification before being deployed. Current efforts are focused on delivering enhanced capabilities based upon results from the Foal Eagle 99 Exercise, fielding to European Command (EUCOM) and Central Command (CENTCOM), and integrating the Joint Decision Support Tools developed under the Joint Logistics – Advanced Capabilities Technology Demonstration. This program element is under Budget Activity 5 because it involves the development of major upgrades that increase the performance of existing systems.

*This project is not a new start nor does it reflect unexpected program growth. Beginning in FY 2001, funding has been realigned from the O&M to the RDT&E appropriation due to Congressional (HAC) direction and subsequent Departmental guidance regarding Information Technology budgeting.

FY 2001 Plans:

o Common Operational Picture–Combat Support Enhanced will be integrated with Joint Operational Planning Execution System (JOPES) 2000, implement Java (a programming language), initiate Java Beans (a component architecture for building modular software systems based on Java) implementation and field to designated locations (1^{st},2^{nd},3^{rd} Qtr; $5,096K).

o GCSS Portal will develop new queries data/information requirements, implement initial Java Beans (1^{st}, 2^{nd}, 3^{rd} Qtr; $9,476K).

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Global Combat Support System (GCSS)/P.E. 0303141K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Global Combat Support System/CS01		0	0	22.287	20.081	20.840	21.337	22.048	Contg	Contg

o Combat Support Data Environment analyze data sources as directed by J4, add new data sources as directed by users (1st, 2nd, 3rd, 4th Qtr; $7,715K).
o Total $22.287M

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY 2000)			0
Appropriated Value			
Adjustments to Appropriated Value			
Adjustments to Budget Year Since FY 2000 President's Budget			22.287
Current Budget Submit/President's Budget (FY2001)	*	*	22.287

Change Summary Explanation:
FY01 initialization is due to Congressional direction converting O&M to RDT&E appropriation.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete
Operation and Maintenance:	24.434	28.706	10.428	9.171	9.240	9.699	9.955	Contg
Procurement:	3.755	4.716	5.136	4.782	4.571	4.722	4.870	Contg

D. Acquisition Strategy: All RDT&E work will be contracted out or funded by using MIPRs. Product Development: JSE/ LOGICON, DEIS II, IDA, Enterworks I-CASE, FEDSIM; Management Services: MITRE; Test and Evaluation: JSE/LOGICON, SAIC

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Global Combat Support System (GCSS)/P.E. 0303141K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Global Combat Support System/CS01		0	0	22.287	20.081	20.840	21.337	22.048	Contg	Contg

E. Schedule Profile:

FY 2001

1st Qtr
- o Common Operational Picture-Combat Support Enhanced (COP-CSE) version 2.01
- o Install GCSS at US Southern Command

2nd Qtr
- o Combat Support Data Environment (CSDE) version 1.6
- o Portal version 1.2
- o Embedded Training Portal version 3.5

3rd Qtr
- o Install GCSS at US Joint Forces Command (JFCOM)
- o Common Operational Picture-Combat Support Enhanced (COP-CSE) version 3.0

4th Qtr
- o Combat Support Data Environment (CSDE) version 2.0
- o Portal version 2.0
- o Install GCSS at US Space Command

FY 2002-2005:

1ST – 4TH Qtr
- o Install new logistics advanced technology tools
- o Complete GCSS installations to all Joint Command Centers
- o Deliver new GCSS major release each fiscal year
- o Incorporate new web technology

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Global Combat Support System (GCSS) PE 0303141K	**PROJECT NAME AND NUMBER** Global Combat Support System/CS01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/CPFF	LOGICON/Arlington	0	0	N/A	5.000	02/01	Contg	Contg	5.000
	MIPR	UNISYS/Falls Church	0	0	N/A	.800	10/00	Contg	Contg	.800
	C/CPFF	Stanley/Alexandria	0	0	N/A	5.100	12/00	Contg	Contg	5.100
	FFRDC	IDA/Arlington	0	0	N/A	1.000	10/00	Contg	Contg	1.000
	C/CPFF	SB TBD	0	0	N/A	.300	10/00	Contg	Contg	.300
	C/CPFF	ENTERWORKS/Sterling	0	0	N/A	2.000	02/01	Contg	Contg	2.000
	C/CPFF	I-CASE/Gunter AFB	0	0	N/A	.750	12/00	Contg	Contg	.750
	MIPR	FEDSIM/Bethesa	0	0	N/A	1.500	10/00	Contg	Contg	1.500
	MIPR	TBD (Training)	0	0	N/A	.500	10/00	Contg	Contg	.500
Management Services	FFRDC	MITRE/Vienna	0	0	N/A	1.400	10/00	Contg	Contg	1.400
	C/CPFF	TBD	0	0	N/A		10/00	Contg	Contg	
Test and Evaluation	C/CPFF	LOGICON/Arlington	0	0	N/A	1.000	10/00	Contg	Contg	1.000
	C/CPFF	SAIC/Falls Church	0	0	N/A	.500	10/00	Contg	Contg	.500
	FFRDC	MITRE/Vienna	0	0	N/A	1.037	10/00	Contg	Contg	1.037
Support Costs	MIPR	RSA Montgomery	0	0	N/A	1.400	10/00	Contg	Contg	1.400
Total						22.287				

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094*	25.781	22.232	18.855	16.167	Contg	Contg

A. **Mission Description & Budget Item Justification**: In November 1997, the Deputy Secretary of Defense (DEPSECDEF) published the Defense Reform Initiative (DRI) which identified the need to promulgate electronic business operations throughout the DOD. To foster the increased application of Electronic Business/Electronic Commerce (EB/EC) across the Department, the Defense Reform Initiative Directive (DRID) #43 was issued to establish the overall direction to the DOD Joint Electronic Commerce Program (JECP) initiative as well as formally establish the Joint Electronic Commerce Program Office (JECPO). Furthermore, the DOD Chief Information Officer (CIO) has developed a cohesive set of guiding principles, goals, objectives, and strategies, to promote EB/EC as a complementary business process throughout the functional areas of the Department. They set forth the summary level direction the Department must take to implement EB/EC in support of its global mission. Since May 1998, JECPO has focused its efforts on EB/EC tools and applications that exhibit joint interoperability and support cross-functional business processes that have been re-engineered to exploit EC technologies. Current programs have been categorized into the work areas of applications and engineering infrastructure. This program element is under Budget Activity 5 because it involves the development of major upgrades that increase the performance of existing systems.

* This project is not a new start nor does it reflect unexpected program growth. Beginning in FY 2001, funding has been realigned from the O&M to the RDT&E appropriation due to Congressional (HAC) direction and subsequent Departmental guidance regarding Information Technology budgeting.

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

FY 2001 Plans:

APPLICATIONS DEVELOPMENT & MODERNIZATION

Central Contractor Registration (CCR) – The developed CCR registry contains procurement, financial, and past performance information for all industry trading partners. Further enhancements to the system will streamline the payment and procurement process by upgrading the interface capability of existing and future automated systems. It is a web-based system that is the primary repository for vendor data required for conducting business with the DoD. The CCR database currently consists of procurement and financial information as well as trading partner data required to do business electronically with the government. The purposes of the database are to allow the DOD to more efficiently comply with the Debt Collection Improvement Act of 1996; to simplify and streamline procurement by reducing duplicate requirements and processes; and to increase visibility of vendor sources for specific goods and services. Contractors are only required to register in the database one time with annual renewals (1st Qtr – 4th Qtr; $2.724M).

DoD Business Opportunities (DoDBusOpps) – DoDBusOpps is a development of a single search mechanism for vendor use in the review of DoD on-line solicitations. This mechanism is achieved by linking web-based systems together. Each of the Defense Services/Agencies provides links through their own web-based systems and to DoD Business Opportunities (1st Qtr – 4th Qtr; 2.230M).

Electronic Document Access (EDA) – EDA expands the use of Internet Technology by providing shared access to contract (and other) documents used by multiple DoD agencies, resulting in a mechanism to electronically store and retrieve large volumes of information across existing communication networks. The system provides on-line storage and retrieval of post award contracts, contract modifications, personal property and freight Government Bills of Lading (GBLs) and vouchers. Documents are stored in a compressed test format. EDA capitalizes on commercial tools that are widely used today. EDA will increase its customer base from Defense Finance and Accounting Service (DFAS) recipients of contracts to include Industry and will pioneer the use of Public Key Infrastructure (PKI) for information assurance. Benefits include the reduction of unmatched disbursements, paper consumption, and increased convenience to members of the user community (1st Qtr – 4th Qtr; $3.925M).

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

DoD Electronic Mall (E-Mall) - The E-Mall provides electronic buying capabilities leveraging the work done for commodities by the Defense Logistics Agency (DLA). The E-Mall is an on line system that can search, locate, compare and order material based upon quality, price, and availability. It provides a single point of entry and search capability for all Internet based DoD electronic catalogs. This enables customers to buy both products and services. The E-Mall is being constructed with a commodities corridor, an information technology corridor, and a services/construction corridor. The Military Services and Defense Agencies are fielding "stores" within these corridors. Users can search across the E-Mall system and order from the following sources: DLA Inventory Control Point managed commodity items and Defense Reutilization and Marketing Office reutilization items; Defense Supply Center Philadelphia's electronic catalog for clothing and textiles items; DLA's electronic catalog of commercial part numbered items; Navy's Direct electronic catalog of IT hardware and software items, Army and Inventory Control Point (ICP) long term contracts for photographic and lighting supplies, food services, and other mechanical items. In addition to providing one-stop visibility for ordering from all DoD electronic catalogs, the E-Mall will provide one-stop visibility of the status of orders. The E-Mall provides the benefits of reduced logistics response time and improved visibility of both government and commercial sources of supply, as well as facilitating the use of the Government purchase card (1^{st} Qtr – 4^{th} Qtr; $2.988M).

Wide Area Workflow (WAWF) – WAWF establishes an electronic folder for the capture of relevant contract data to include DD Form 250 (Receipt and Acceptance) documentation and supporting disbursements transacted. It is a web-based system designed to eliminate paper from several of the processes in the lifecycle. Initial implementation addressed receipt/acceptance(RA) and invoice/payment. Capabilities will be added to address procurement request(PR)and functional descriptions(FD) and Contract Closeout processes. The WAWF-RA prototype provides capabilities for vendors to submit invoices and DD Form 250 receipt/acceptance documents using interactive web-based forms or file transfer protocol (FTP) data directly from their internal accounting systems. Government inspection/acceptance capabilities are provided via the web and all documents are accessible to authorized users in a virtual contract payment folder. During functional proof of concept, WAWF is prototyping several commercial tool sets to assess capabilities for supporting functional and technical requirements. Benefits include support for expeditious processing of invoices/receipts and reduction of unmatched disbursements by making all documentation required for payment easily accessible (1^{st} Qtr – 4^{th} Qtr; $3.213M).

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

Paperless Contracting - Past Performance Automated Information System (PPAIS) Enhancements expand the tools for sharing and managing past performance information across DOD, to include enhancement identified by the End to End Process Modeling, the evolving EC Architecture, interface improvements with related systems, and user defined changes. This includes developing interfaces with commercial systems using evolving standards. Requirements for these tolls are set forth in the "To Be" End to End Procurement Process Model and in various policy memos. Product Data Markup Language (PDML) is an eXtensible Markup Language (XML) for the exchange of product data among COTS Product Data Management (PDM) systems and between PDM systems and government legacy product data repositories. Its goal is to provide a standard language basis for universal access to product data describing defense material in a mixed government-contractor repository environment (1^{st} Qtr – 4^{th} Qtr; $4.710M).

To-Be Process Implementation – In an effort to move toward the future shared data environment envisioned under paperless contracting, the DEPSECDEF issued DRID #47 – End-to-End Procurement Process. DRID #47 established a DoD-wide Working Integrated Process Team (WIPT) to develop and document the future End-to-End Procurement Process. The WIPT leveraged the As-Is contracting business process model, as well as the results from the DRID #32, Paperless Contracting Closeout and DRID #33, Paperless DD Form 250, Material Inspection and Receiving Report teams to build a To-Be End-to-End Procurement Process Model, including process dependencies and information requirements and responsibilities. The To-Be Model includes an end-to-end process flow model and a series of end-to-end systems maps representing DOD procurement in the future shared data environment (1^{st} Qtr – 4^{th} Qtr; $1.117M).

Enterprise Configuration Management (ECM) - The primary purpose of this initiative is to provide configuration management support for the planning, development and successful implementation of ECM. The pilot project will implement enterprise configuration management among six existing projects: ECPN, CCR, E-Mall, EDA, BusOpps and WAWF by establishing the ECM baseline, installing an ECM system, and developing interoperability among the current project systems (1^{st} Qtr – 4^{th} Qtr; $0.232M).

ENGINEERING INFRASTRUCTURE

Electronic Commerce System Engineering - Facilitate the implementation of EB/EC best business practices and technology to achieve a paperless environment in DoD. In order to achieve this mission, DoD EC Architecture is required which provides a roadmap for the future of DoD EB/EC. Development and continuous evolution of this enterprise architecture will require a significant commitment of resources as well as buy-in across the DoD EB/EC community. This development of the enterprise architecture effort includes:

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

(1) working with the functional community representatives to develop methods to establish the operational view of the architecture, (2) evaluation and recommendation of the appropriate architecture tools and methods to ensure the development process is both sound and traceable to functional requirements, and (3) execution of a lead role in the development of the DoD Architecture's system view (1st Qtr – 4th Qtr; $1.527M).

EC Integration Services - Integration among application and infrastructure leading to a common business environment is the ultimate goal of EC. The technical infrastructure among the capabilities that will be addressed is a single log-on using Public Key Infrastructure (PKI). Shared Data is another integration option. DoD is taking major strides towards its goal of migrating paper-based military and business affairs to an electronic enterprise. A digital certificate-based PKI can provide the mechanisms required to secure and protect electronic business information. PKI supports the use of information assurance services needed to protect the transmission of electronic data by enabling the use of data cryptography and electronic digital signature (1st Qtr – 4th Qtr; $2.977M).

The information assurance services provided include:

Data Integrity – Protect data from unauthorized modification
Data Confidentiality – Protect data from unauthorized disclosure
User Identification and Authentication – Verification that entities are who they claim
Access Control – Protect against unauthorized access
Wide Area Workflow Prototype – A means of user authentication and to digitally sign the receipt documents

Infrastructure Testing – The JECPO Electronic Commerce Infrastructure consists of multiple systems, developed for multiple Defense Information Systems Agency (DISA) organizations, by multiple vendors. These individual systems are integrated into the Electronic Commerce Infrastructure. This testing by the Joint Interoperability Test Command (JITC), supports the Electronic Commerce Processing Node, Electronic Document Access, Central Contractor Registration, Electronic Commerce Interoperability Process testing for the Value Added Network, DoD/Federal Gateway, Automated Information Systems, and Trading Partner (TP) EC readiness (1st Qtr – 4th Qtr; $1.924M).

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

EC Infrastructure Test & Development - The primary purpose for this initiative is for the DISA Continuity of Operations and Test Facility (DCTF) to provide a managed test and development environment to support JECPO, JITC, application developers and the DISA WESTHEM Regional Support Activities for prototype and operational testing prior to fielding solutions. (1st Qtr - 4th Qtr; $0.527M).

Total $28.094M

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY2000)			0
Appropriated Value			
Adjustments to Appropriated Value			
Adjustments to Budget Year since FY2000 Presidents Budget			28.094
Current Budget Submit/President's Budget (FY2001)	*	*	28.094

Change Summary Explanation:
*FY2001 initialization is due to Congressional direction converting O&M to RDT&E appropriation.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete
Operation and Maintenance:	36.108	41.833	10.933	11.749	12.154	12.557	12.955	Contg
Procurement:	4.293	3.680	3.700	3.719	3.709	3.724	3.736	Contg

D. Acquisition Strategy: The mission of JECPO is to accelerate the application of Electronic Business Practices and Associated Information Technologies to improve DoD acquisition processes, support life-cycle sustainment and other department business operations. JECPO is developing and maintaining Web-based applications to support the paperless contracting life cycle from requirements generation through contract closeout. These include Central Contractor Registration, Wide Area Workflow, Past Performance Automated Information System, Electronic Document Access, Emall, and Business Opportunities.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

JECPO is developing a DoD EC Architecture using Command, Control, Communication, Computers, Intelligence Surveillance and Reconnaissance (C4ISR) and the Technical Architecture Framework for Information Management (TAFIM) as guides. The architecture's operational, systems, and technical views are being vetted throughout the Department through the Architecture Coordination Council in the DoD CIO. JECPO is addressing EC Integration Services by using public key infrastructure to facilitate single sign on capabilities, and by data integration among JECPO applications. The projected Common Business Environment, made up of applications and infrastructure, will leverage the Defense Information Infrastructure Common Operating Environment (DII COE). This work is being performed by various private contractors and other government entities.

E. Schedule Profile:

FY2001 –
1st Qtr:
- DII COE compliant software received
- Receive complete software documentation for CCR software components
- Receive installation procedures
- Receive WAWF user's manual
- Receive software test plan and test cases
- Continue development of version 1.x
- Receive Defense Electronic Business eXchange (DEBX) software (DII COE segments)
- Receive translator maps and documentation for systems connected to DEBX

2nd Qtr:
- Continue partnerships with Services and Agencies
- Receive development and expansion of BusOpps website

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** Electronic Commerce (EC)/P.E. 0305840K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Electronic Commerce/EC01		0	0	28.094	25.781	22.232	18.855	16.167	Contg	Contg

3rd Qtr:
- Receive continued DoD-wide execution of the Corporate or Defense Logistics Management Standards (DLMS) Implementation Plan
- Migration of corporate level infrastructure and services
- Continue development of policy and procedures for centralized management and control of DoD logistics data

4th Qtr:
- Development of EDA applications
- Develop post deployment support
- Develop templates and provide conversion support
- Develop implementation plan and charter for End-to-End process model
- Receive engineering guidance on the strategic direction in the evolution to the EC architecture

FY2002 – FY2005

1st – 4th Qtr
- Continue corporate level configuration management support
- Increase CCR functionality
- Efforts to support single face initiative to all DOD vendors
- Continue improvement of the acquisition automation process
- Contractor integration support
- Integrating the use of COTS tools
- Analysis of engineering issues and oversight of their resolution
- Coordinating the migration to commercial standards

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Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Electronic Commerce (EC)/PE 0305840K	**PROJECT NAME AND NUMBER** Electronic Commerce/EC01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Applications										
Wide Area Workflow	CPFF	CACI/Falls Church, VA	0	0	N/A	2.853	10/00	Contg	Contg	2.853
	CPFF	Stanley/Alexandria, VA		0	0	N/A	0.360	10/00	Contg	Contg	0.360
Electronic Document Access	MIPR	DAPS/Mechanicsburg, PA		0	0	N/A	1.488	10/00	Contg	Contg	1.488
	CPFF	EDS/Herndon, VA		0	0	N/A	2.437	11/00	Contg	Contg	2.437
DoD Business Opportunities	MIPR	Services/Agencies		0	0	.N/A	2.230	02/01	Contg	Contg	2.230
Central Contractor Registration	CPFF	EDS/Herndon, VA	0	0	N/A	0.339	11/00	Contg	Contg	0.339
	MIPR	DLIS/Battle Creek, MI		0	0	N/A	1.707	11/00	Contg	Contg	1.707
	CPFF	PricewaterHouse/Fairfax, VA		0	0	N/A	0.678	11/00	Contg	Contg	0.678
Enterprise Configuration Mgmt	CPFF	ARTEL/Reston, VA	0	0	N/A	0.232	02/01	Contg	Contg	0.232
DoD Email IT Corridor	CPFF	Stanley/Alexandria, VA		0	0	N/A	0.196	04/01	Contg	Contg	0.196
DoD Email	TBD	TBD		0	0	N/A	2.792	02/01	Contg	Contg	2.792
To-Be Process Implementation	CPFF	PricewaterHouse/Fairfax, VA	0	0	N/A	1.117	04/01	Contg	Contg	1.117
Paperless Contracting Prototype Support	CPFF	TBD		0	0	N/A	4.710	TBD	Contg	Contg	4.710
		Subtotal Application				21.139				

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Electronic Commerce (EC)/PE 0305840K	**PROJECT NAME AND NUMBER** Electronic Commerce/EC01

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure										
EC Integration Services	CPFF	EDS/Herndon, VA	0	0	N/A	2.977	12/00	Contg	Contg	2.977
EC Architecture	FFRDCC	MITRE/Vienna, VA	0	0	N/A	1.527	11/00	Contg	Contg	1.527
EC Testing	MIPR	JITC/Ft Huachuca, AZ	0	0	N/A	1.924	11/00	Contg	Contg	1.924
Operational Testing	MIPR	DCTF/Slidell, LA	0	0	N/A	0.527	12/00	Contg	Contg	0.527
		Subtotal Infrastructure				6.955				
		Total				28.094				

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

A. Mission Description & Budget Item Justification: The Advanced Information Technology Services Joint Program Office (AITS-JPO), a joint DARPA/DISA office, facilitates the transition of DARPA's substantial information systems technology research into DISA's operational support of the warfighter. The AITS-JPO, among other functions: a) provides advanced technology demonstrations and collaboration capabilities for R&D and Battle Lab communities; b) engineers and reinforces components for leave-behind and transition into the Global Information Grid (GIG)/Defense Information Infrastructure (DII), including the Global Command and Control Systems (GCCS) and Global Combat Support Systems (GCSS); c) augments transitioning products with improved security, scalability, and GIG/DII compliance; and d) provides advanced, hardened capabilities (Leading Edge Services) to select operational beta test sites. As a result, this program element is under Budget Activity 5. Leading Edge Services are information transport and value added services not available from the DII and for which customers are willing to assume some of the risk associated with development and initial deployment. These services include information processing, storage, and retrieval; communications (voice, data, video, multimedia); and security technology and application in command, control, and intelligence, and combat support for the worldwide DOD communities.

FY 1999 Accomplishments:

- o Developed, hardened and transitioned an initial capability for rapid Courses of Action/Time-Phased Force Deployment Data (COA/TPFDD), TPFDD/OPLAN readiness and distributed assessment for GCCS 3.0 stage 2 with a focus on Joint Staff Joint Operating Planning and Execution System/Crises Action Planning and Execution (JOPES/CAPE) reengineering (2^{nd}Qtr - 4^{th}Qtr; $2,664K).
- o Demonstrated integrated web-based collaboration, logistics Common Operational Picture (COP) initial enhancements and synchronized log planning for GCSS. Supported the transition of Joint Logistics Advanced Concept Technical Demonstration (ACTD) to Advanced Common Operating Environment (COE)/GCSS Infrastructure (2^{nd}Qtr - 4^{th}Qtr; $2,864K).

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

- o Developed an advanced information environment for the DII COE which permitted plug and play introduction of new capabilities, information sharing and collaboration across diverse networks in support of joint planning and execution (3rdQtr - 4thQtr; $1,564K).
- o Prototyped and evaluated high-performance, secure, distributed Common Object Request Broker Architecture (CORBA) services implementation and established pilot services for integrating broadcast and conventional webs (e.g., Intelink, SIPRnet, ATM nets) (3rdQtr - 4thQtr; $2,225K).
- o Provided an enhanced common operational picture, which included broadcast COP, multimedia & video services, reach-back archiving & C4I systems integration with Information Dissemination Management (IDM) services (3rdQtr - 4thQtr; $2,264K).
- o Fielded tools for continuous collaborative plan and workflow management, achieving quantum improvement in the distributed planning and assessment capabilities offered in Common Operating Modeling Planning and Simulation Strategy (COMPASS); and evaluated the initial Joint Continuous Strike Element (JCSE) ACTD products for transition to multiple service systems (2ndQtr - 4thQtr; $1,564K).
- o Provided the basis for integrating C3I and simulation applications through the object and multicast infrastructure (2ndQtr - 4thQtr; $1,964K).
- o Total $15.109M

FY 2000 Plans:

- o Provide initial DII/COE-compliant capability for distributed courses of action development, deployment/employment visualization, and analysis interacting between GCCS and modeling and simulation sites (2ndQtr - 3rdQtr; $3,139K).
- o Transition Joint Logistics ACTD Joint Decision Support Toolkit into GCSS and provide augmentation to GCSS mediated data services and visualization (including COP)to support them (2ndQtr - 4thQtr; $2,539K).

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

- o Demonstrate integration of the U.S. Imagery and Geospatial Architecture into DII COE systems using end-to-end object services and video archive services(2^{nd} Qtr - 4^{th} Qtr; $2,345K).
- o Provide a collaborative virtual workspace capability for the DII COE based on DARPA and other emerging tools (2^{nd}Qtr - 4^{th}Qtr; $2,246K).
- o Continue transition of JCSE ACTD Joint Targeting products as appropriate (2^{nd}Qtr - 4^{th}Qtr; $182K).
- o Provide an initial capability for use by GCCS of IDM services coupled with an adaptive network capability in the DISN (2^{nd} Qtr – 3^{rd} Qtr; $397K).
- o Develop, harden, and demonstrate advance infrastructure and information assurance services to support a secure, adaptive Joint Force Information Environment (2^{nd}Qtr – 3^{rd}Qtr; $3,522K).
- o Total $14.370M

FY 2001 Plans:

- o Initial transition to GCCS execution monitoring and continuous real-time assessment using products from the Adaptive Course of Action (ACOA) ACTD, and other relevant DARPA and Service technology (2^{nd}Qtr - 4^{th}Qtr; $2,905K).
- o Incorporate DARPA analysis tools into the Integrated Intelligence and Imagery Database (I3DB) component of GCCS and other C2 systems (2^{nd}Qtr - 4^{th}Qtr; $1,923K).
- o Integrate knowledge-based product access and dissemination (geospatial, intelligence, plans)with IDM services (2^{nd}Qtr - 3^{rd}Qtr; $940K).
- o Complete integration of Joint Logistics products and other DARPA combat support tools into GCSS (2^{nd}Qtr - 4^{th}Qtr; $940K).
- o Provide a capability for extensive functional integration between the operational planning functions of the GCCS and the development/assessment of the combat support plan (2^{nd} Qtr - 4^{th} Qtr; $1,960K).
- o Transition an upgraded collaborative workspace and advanced shared applications that increases interaction between C4I systems, combat support systems and modeling and simulation anchor desks (2^{nd} Qtr - 4^{th} Qtr; $1,923K).

Exhibit R-2, RDT&E Budget Item Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

- o Transition a cost-effective capability to support dynamic quality of services enclaves and information release to coalition forces (2nd Qtr - 4th Qtr; $1,235K).
- o Provide enhanced GCCS and GCSS applications coupling to an optimized IDM and global networked architecture (2nd Qtr - 4th Qtr; $1,922K).
- o Initial transition of products from the DARPA Information Assurance program and other IA technology into DII infrastructure, including intrusion detection and guards (2nd Qtr - 4th Qtr; $937K).
- o Total $14.685M

B. Program Change Summary

	FY99	FY00	FY01
Previous President's Budget (FY 2000)	15.179	15.172	15.075
Appropriated Value	15.588	15.172	
Adjustments to Appropriated Value	-.479	-.759	
Congressional Rescission		-.043	
Adjustments to Budget Year Since FY 2000 President's Budget			-.390
Current Budget Submit/President's Budget (FY2001)	15.109	14.370	14.685

Change Summary Explanation:

FY99 change due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming.

FY00 funding reduction used for offset to fund higher priority Departmental initiatives.

FY01 funding reduction due to revised fiscal guidance.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete
Operation and Maintenance:	$1.970	$2.412	$2.444	$2.252	$2.286	$2.336	$2.387	Contg

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

D. Acquisition Strategy: MITRE, Reston, VA; Houston Associates, Inc., SAIC, Arlington, VA and SSC, San Diego

E. Schedule Profile:

FY 1999

1st Qtr

- o Engineer and reinforce GCCS and GCSS leading edge services for operational evaluation at twice FY98 levels.
- o Augment transition products with improved security scalability and DII compliance.
- o Transition selected components of DARPA Battlefield Awareness, command and control, modeling, and simulation initiatives to LES and/or DII. Facilitate maintenance by adapting interfaces to an emerging commercial marketplace.

2nd Qtr

- o Demonstrate a process to align DARPA's C4I architecture approach with DII evolution.
- o Transition object based architecture components to the DII COE.

4th Qtr

- o Participate with the Joint C4ISR Battle Center and Federated Battle Lab in Virtual Collaboratory experiments to assist Defense Agencies and Services in integrating advanced C4I applications and technology onto the DII.
- o Complete first-year expansion of the AITS-JPO mission to a greater role in DII technology risk reduction.
- o Provide advanced information technology services for the R&D and Battle Labs Communities at twice FY98 levels (Joint communications infrastructure synchronization and Federated Battle Lab Network.)
- o Engineer and reinforce GCCS and GCSS enhancements.
- o Complete transition of advance joint planning ACTD components into GCCS.

FY 2000

- o Continue transition of components of DARPA technology programs to DII.
- o Expand transitions to include integration of technology from other Services and Agencies as appropriate.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

FY 2000 Continued

2nd Qtr

- Distributed planning/analysis capability to GCCS.
- Initial Logistics Joint Decision Support tools COE-compliant with and operating with GCCS/GCSS.
- Collaboration toolkit for DII COE.

3rd Qtr

- Information Dissemination Management services into GCCS, DII COE and DISN.
- Continue Battle Lab experiments with advance information infrastructure and infosec components.

4th Qtr

- Complete transition of Battlefield Awareness Data Dissemination (BADD) ACTD components to GCCS imagery and intelligent database segments, and Geospatial information systems.
- Complete integration of Joint Logistics ACTD tools to GCCS/GCSS.
- Continue Battle Lab experiments with advanced information infrastructure and infosec components.

FY 2001

1st Qtr

- Continue integration and transition of components of DARPA's, Services' and Agencies' technology programs to GIG and DII aligned with GIG/DII software releases.
- Continue to develop joint and coalition interoperability capabilities in accordance with Joint Staff priorities, available technologies, and GIG Strategic Plans.

2nd Qtr

- GCCS integrated collaboration and plan execution monitoring capability.
- Integrated Intelligence and Imagery Database (I3DB) components and product access via IDM services.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05					**R-1 ITEM NOMENCLATURE** PE0604764K/Advance Information Technology Services Joint Program Office (AITS-JPO)					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Leading Edge Pilot Info Tech/T26		15.109	14.370	14.685	14.573	14.449	14.513	14.682	Contg	Contg

FY 2001 Continued

- o Continue sustained support of leading edge deployed capabilities until they are fully transitioned.
- o Continue Battle Lab experiments, including Ops/Combat support integration between GCCS, GCSS,and Service systems

3rd Qtr

- o Demonstrate integrated enterprise management for network, IDM and IA components to achieve optimized information infrastructure quality of service management.
- o Deliver automated watchboard capabilities to GCCS/GCSS for execution monitoring.
- o Continue sustained support of leading edge deployed capabilities until they are fully transitioned.
- o Continue Battle Lab experiments, including Ops/Combat support integration between GCCS, GCSS, DII COE, DISN, and service systems.

4th Qtr

- o Collaboration and coalition information assurance transitions.
- o Demonstrate advanced knowledge-based decision-making and visualization capabilities for integrated GCCS/GCSS.
- o Initial capability for collaborative Joint COP Coordination.
- o Continue sustained support of leading edge deployed capabilities until they are fully transitioned.
- o Continue Battle Lab experiments, including Ops/Combat support integration between GCCS, GCSS, and Service systems.

FY 2002-2005

- o Continue integration and transition of components of DARPA’s, Services’ and Agencies’ technology programs to GIG/DII aligned with DII software releases.
- o Continue sustained support of leading edge deployed capabilities until they are fully transitioned.
- o Continue Battle Lab experiments, including Ops/Combat/Intell support integration between GCCS, GCSS, and Service systems.

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/05	**PROGRAM ELEMENT** Advance Information Technology Services Joint Program Office (AITS-JPO)/PE0604764K	**PROJECT NAME AND NUMBER** Leading Edge Pilot Information Technology/T26

Cost Category Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering/technical services										
	C-CPAF	HAI, Arlington, VA	3.222	3.813	Dec 99	4.258	Dec 00	Contg	Contg	11.293
	C-CPAF	SAIC,Arlington, VA	1.645	3.072	Dec 99	2.481	Dec 00	Contg	Contg	7.198
	MIPR	SSC, San Diego,CA	1.948	1.255	Dec 99	2.162	Nov 00	Contg	Contg	5.365
	MIPR	SSC, Charleston, SC	1.050	1.195	Dec 99	1.195	Dec 00	Contg	Contg	3.440
All other Contracts			4.189	3.420	Dec 99	1.534	Dec 00	Contg	Contg	N/A
Systems Engineering										
	C-CPAF	MITRE, Arlington VA	3.055	1.615	Nov 99	3.055	Nov 00	Contg	Contg	7.725
TOTAL			15.109	14.370		14.685				

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06					**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element Cost		45.040	45.495	45.350	44.679	44.025	45.081	46.162	Cont.	Cont.
001 Defense Technical Information Center		33.618	35.603	34.178	33.718	33.291	34.118	34.974	Cont.	Cont.
002 Information Analysis Centers		11.422	9.892	11.172	10.961	10.734	10.963	11.188	Cont.	Cont.

A. Mission Description and Budget Item Justification: The Defense Technical Information Services Program Element provides resources for the Defense Technical Information Center (DTIC) and the DoD Information Analysis Centers (IACs). DTIC's mission and function is to provide for the centralized operation of DoD Services for the acquisition, storage, retrieval, and dissemination of Scientific and Technical Information (STI), including data which is restricted, controlled and/or classified. DTIC also functions as the central activity within the DoD for exploring and applying advanced techniques and technology to DoD STI systems and for developing improvements in service and STI transfer effectiveness. The purpose of the program is to permit timely and effective exchange of information, to improve research, to avoid unnecessary duplication of effort and resources, and to improve decision making. DTIC's concept of operations is to function as the front door to DoD unclassified and unlimited information resources for customers internal and external to DoD; as the door to controlled information resources for internal DoD use; and as a repository and processor for STI and one-stop shopping. The military, universities, managers, scientists, engineers, and contractors look to DTIC for leadership in the advancement of information access, sharing and knowledge management. The IACs are contractor-operated research organizations chartered by OSD to collect, analyze, synthesize and disseminate worldwide scientific and technical information in specialized fields to prevent re-inventing research and to promote standardization within these fields. The Program Management Office provides management and oversight of the 13 DTIC funded IACs. DTIC currently serves information from its collection to 5000 registered organizations located in the U.S. and overseas. In addition, DTIC operates 100 websites (e.g. Homepages and associated web pages) for itself and other organizations with an average of 30,000,000 accesses per month in FY 99. The Program Element is under Budget Activity 6, RDT&E Management Support, which provides for the support of operations required for general research and development and not allocable to specific missions.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

FY 1999 Accomplishments:

DTIC: Funded ongoing basic operations including input of information (media conversion where needed, cataloging, abstracting, and indexing), output of products and services, personnel, maintenance of equipment, postage and support services paid to other government agencies via Inter-service Support Agreements (1 Qtr – 4 Qtr; $29.667 Million).

- Business Process Reengineering – Managed and executed Science & Technology (S&T) BPR initiatives for the Deputy Under Secretary of Defense for Science and Technology (DUSD(S&T)). Electronically collected and disseminated the DoD's Annual FY 98 In-House RDT&E Activities Report. Reengineered the Research and Development Descriptive Summary (RDDS) website to provide a streamlined and improved search capability. Identified requirements for the BIO-MED Web site and Document Collaboration Tool. Updated data and enhanced the current S&T management tools i.e., S&T InfoWeb and the DoD S&T Collaboration tool incorporating latest state-of-the-art technology and security improvements (1 Qtr – 4 Qtr; $2.436 Million).
- Modernization – Enhanced the Electronic Document Management System capabilities to include electronic input and delivery and completed the integration effort for conversion from microfiche/microfilm formats to digital image. Expanded the Defense Virtual Library to include sound, using national standards for cataloging, metadata and resource identification. Further incorporated multimedia objects into DTIC's information products which use video streaming, videoconferencing and distance learning technologies, (with the goal of producing complex multimedia documents and interactive learning systems). Continued efforts to redefine and replace DTIC's 30 year-old primary online system Defense Research Development Test and Evaluation Online System (DROLS). Defined a modular web-based architecture for DTIC's online systems. Coordinated DoD joint & service level participation in the Defense Knowledge Network (2 Qtr – 4 Qtr; $1.515 Million).

IAC: Funded ongoing program management operations for communications and security, including promoting awareness of IAC capabilities. Upgraded hardware and software on the Office Filing System (OFS) to be Y2K compliant and to provide electronic capability for seamless program operations and processes. Identified and managed government information collections abandoned by disestablished organizations to be transferred and incorporated into the IAC program. Negotiated/conducted three new competitive procurements (1 Qtr – 4 Qtr; $1.289 Million).

- Provided basic IAC core operations, contracting officer's technical representative and security office support for each of the DTIC sponsored, contractor operated IACs (1 Qtr – 4 Qtr; $10.133 Million). Examples of accomplishments include:

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

- Supported the warfighter with push/pull technology that provides services and creates unique products which will ensure military technological superiority.
- Provided substantial science and technology information in support of the Defense Technology Objectives and the Joint Warfighter Science and Technology Plan to develop and transition superior technology which enables an affordable and decisive military capability.
- Identified, collected, and processed new and existing classified STI for developing unclassified synopsis for broader information dissemination.
- Incorporated future modernization techniques and equipment to provide state-of-the-art electronic access and dissemination of IAC products and services.
- Continued conversion of fragile historical archives into electronic media to preserve critical information and provide a totally paperless environment.
- Implemented Information Assurance tools to automate and disseminate classified information through secure networks.
- Consolidated IAC websites at DTIC for improved security and commonality for DoD Web/NIPRNET/SIPRNET.

$45.040M Total

FY 2000 Plans:

DTIC: Funds ongoing basic operations including input of information (media conversion where needed, cataloging, abstracting, and indexing), output of products and services, personnel, maintenance of equipment, postage and support services paid to other government agencies via Inter-service Support Agreements (1 Qtr – 4 Qtr; $31.687 Million).

- Business Process Reengineering – Manage and execute Science & Technology (S&T) BPR initiatives for the Deputy Under Secretary of Defense for Science and Technology (DUSD(S&T)). Electronically collect and disseminate DoD's FY 99 RDT&E In-House Activities Report. Update the Research and Development Descriptive Summary (RDDS) website with the latest data. Develop the BIO-MED Web site and Document Collaboration Tool. Identify Best Practices for the DoD Technology Area Review and Assessment (TARA) Program. Develop Best Practices Web site. Continue enhancements and redesign to the DoD S&T InfoWeb and the S&T Collaboration tool (1 Qtr – 4 Qtr; $2.197 Million).
- Modernization – Expand efforts to improve the receipt, storage, and dissemination of full text information in electronic formats. Develop enhanced functional capabilities for the Electronic Document Management System including additional electronic submission capabilities and output formats/products. Expand Defense Virtual

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

Library adding integrated multimedia objects with text, graphics, moving images and sound. Initiate deployment of a system for persistent, long-term naming and location of DoD digital materials on the Internet. Begin implementing the replacement of the Defense RDT&E Online system, extend to classified information and other online systems by identifying and establishing an integrated three-tier architecture. Further the dissemination of DTIC products and training through application of distance learning, next generation search and retrieval and full multimedia capabilities, including color images, visualization tools, and audio/video streams. Begin incorporation of Defense Knowledge Network principles into DTIC's architecture. Together with DOD joint & service participants, stand up a first generation Defense Knowledge Network, to include DTIC data sources. Implement Internet credit card pre-authorization using U.S. Treasury payment server (1 Qtr – 4 Qtr; $1.719 Million).

IAC: Funds ongoing program management operations for communications and security, including promoting awareness of IAC capabilities. Enhanced the Office Filing System (OFS) providing electronic capabilities for seamless program operations and processes. Continue to identify and manage government information collections abandoned by disestablished organizations to be transferred and incorporated into the IAC program. Negotiate/conduct two new competitive procurements (1 Qtr – 4 Qtr; $.249 Million).

o Provide basic core operations; contracting officer's technical representative, and security office support for each of the DTIC sponsored, contractor operated IACs (1 Qtr – 4 Qtr; $9.643 Million). Examples of planned accomplishments include:

- o Provide substantial science and technological information in support of the Defense Technology Objectives and the Joint Warfighter Science and Technology Plan to develop and transition superior technology which enables affordable and decisive military capabilities.
- o Incorporate future modernization techniques and equipment to provide state-of-the-art electronic access and dissemination of IAC products and services.
- o Update and monitor secure systems.
- o Exploit foreign exchange of authorized information through links previously established with DoD operational, intelligence, and other government agencies.
- o Implement the beginning phase of the Total Electronic Migration (TEM) system allowing IAC documents to be digitized and stored both locally and at DTIC, with an electronic retrieval system using IAC supplied metadata.
- o Refocus and start migration of IACs vision to better support Joint Vision 2010.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

- Pursue, identify, develop and/or implement new and innovative technologies with potential for overcoming existing barriers to information communication among the IAC user community.

$45.495M Total

FY 2001 Plans:

DTIC: Funds ongoing basic operations including input of information (media conversion where needed, cataloging, abstracting, and indexing), output of products and services, personnel, maintenance of equipment, postage and support services paid to other government agencies via Inter-service Support Agreements (1 Qtr – 4 Qtr; $29.942 Million).

- Business Process Reengineering – Manage and execute Science & Technology (S&T) BPR initiatives for the Deputy Under Secretary of Defense for Science and Technology (DUSD(S&T)). Electronically collect and disseminate DoD's FY00 RDT&E In-House Activities Report. Update the Research and Development Descriptive Summary (RDDS) website with the latest data. Continue enhancements to the DoD S&T InfoWeb and the S&T Collaboration Tool. Identify FY 01 Best Practices for the DoD Technology Area Review and Assessment (TARA) Program. Develop a virtual technology expo to improve awareness of emerging technologies (1 Qtr – 4 Qtr; $2.632 Million).
- Modernization – Enhance the Electronic Document Management System to include additional output formats/products and new indexing capabilities. Expand capabilities of the Defense Virtual Library, emphasizing inter-operability across diverse repositories and facilitating widespread use of a system for naming and location of DOD digital materials on the Internet. Integrate and implement new hardware and software tools for modernization of DTIC's online system and make the classified prototype operational. Convert legacy applications to the new modular three-tier architecture. Enhance application of distance learning capabilities. Expand Defense Knowledge Network with additional DoD data sources. Review DTIC's registration policies, streamline DTIC's registration process, and implement online user registration (2 Qtr – 3 Qtr; $1.604 Million).

IAC: Funds ongoing program management operations for communications and security, including promoting awareness of IAC capabilities. Enhanced the Office Filing System (OFS) to provide more electronic capability for seamless program operations and processes. Identify and manage government information collections abandoned by disestablished organizations to be transferred and incorporated into the IAC program. Negotiate/conduct two new competitive procurements (1 Qtr – 4 Qtr; $.802 Million).

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

o Provides basic core operations; contracting officer's technical representative, and security office support for each of the DTIC sponsored, contractor operated IACs (1 Qtr – 4 Qtr; $10.370 Million). Examples of planned accomplishments include:

- o Continue implementation of Total Electronic Migration (TEM) system allowing IAC documents to be digitized and stored both locally and at DTIC, with an electronic retrieval system using IAC supplied metadata.
- o Continue to provide substantial science and technological information in support of the Defense Technology Objectives and the Joint Warfighter Science and Technology Plan to develop and transition superior technology which enables an affordable and decisive military capability.
- o Assimilate future modernization techniques and equipment to provide state-of-the-art electronic access and dissemination of IAC products and services.
- o Enhance efforts to totally convert fragile historical archives into electronic media to preserve critical information and provide a totally paperless environment.
- o Update and monitor secure systems.
- o Incorporate new and innovative technologies with the potential for overcoming existing barriers to information communications among the IAC user community.

$45.350M Total

B. Program Change Summary:

	Cost in Millions		
	FY 99	FY 00	FY 01
Previous President's Budget (FY 2000)	45.335	46.655	45.729
Appropriated Value	45.469	46.655	
Adjustment to Appropriated Value	-.429	-1.029	
Congressional Rescission		-.131	
Adjustment to Budget Year since FY 2000 President's Budget			-.379
Current Budget Submission/President's Budget (FY 2001)	45.040	45.495	45.350

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/06	**R-1 ITEM NOMENCLATURE** Defense Technical Information Services/0605801K

Change Summary Explanation:

FY 1999 change due to adjustments to Defense-Wide RDT&E appropriation
FY 2000 change due to Government-wide Rescission and also reflects a below threshold reprogramming that supports higher priority Departmental initiative
FY 2001 changes reflect revised inflation rates and the support of other Departmental initiatives

C. Other Program Funding Summary: No related efforts

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** C3 Interoperability 0208045K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element		29.080	23.629*	37.072	37.815	38.599	39.305	40.028	Contg	Contg
Test and Evaluation/T30		19.971	15.314	26.326	26.772	27.233	27.542	27.756	Contg	Contg
Major Range Test Facility Base (MRTFB)/T40		9.109	8.315	10.746	11.043	11.366	11.763	12.272	Contg	Contg

A. Mission Description and Budget Item Justification:

Ensures that projects, programs, systems and subsystems implemented under and interfacing with the Defense Information Infrastructure (DII) are technically sound and operationally effective and suitable through test, evaluation and Compatibility, Interoperability, and Integration (CII) certification. The CII of DII systems is addressed in multiple DoD regulations, which require new or modified programs to interact and interface with the DII. The emphasis in performing DII Test and Evaluation (T&E) is to determine the extent and success of full compatibility, integration, interoperability and standards compliance of systems within the context of the DII framework. Function as an Operational Test Agency (OTA) to test/certify the operational effectiveness and suitability of the Defense Information Systems Network (DISN), Defense Message System (DMS), Global Command and Control System (GCCS), and other strategic systems. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

* FY 2000 funding reduction used for offset to fund higher priority Departmental initiatives.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** C3 Interoperability 0208045K

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY 2000)	26.219	27.366	28.962
Appropriated Value	26.296	27.366	
Adjustments to Appropriated Value	2.784	-3.660	
Congressional Rescission		-.077	
Adjustments to Budget Year Since FY 2000 President's Budget			8.110
Current Budget Submit/President's Budget (FY 2001)	29.080	23.629	37.072

Change Summary Explanation:

FY 1999 increase due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming to support Y2K Operational Evaluations.

FY 2000 reduction is a result of a required offset to fund higher priority Departmental initiatives.

FY 2001 increase is due to a major Departmental initiative to support Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Risk Mitigation Network.

Exhibit R-2a, RDT&E Project Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** C3 Interoperability/0208045K				**PROJECT NAME AND NUMBER** Test and Evaluation/T30				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		19.971	15.314	26.326	26.772	27.233	27.542	27.756	Contg	Contg

A. Mission Description & Budget Item Justification: Through effective life cycle test and evaluation (T&E), this project ensures the Defense Information Infrastructure (DII) systems meet the information needs of the warfighter by determining effectiveness and suitability as well as the extent of compatibility, integration, interoperability, and standards compliance of the system within the DII, based on criteria established by the warfighters. T&E is performed throughout the life cycle including proof-of-concept, system development, system deployment, and system upgrade and modification.

FY 1999 Accomplishments:

o Provided Operational Test and Evaluation (OT&E) of DoD's major C4I programs, such as DMS, GCCS, and DISN, for operational effectiveness and suitability by documenting critical operational issues through an appropriate test, and referring results to the decision authority. Performed Modified Development Test (MDT) of GCCS and completed 15 risk assessment plans for various GCCS software applications. Completed testing and implementation of Navy's Message Conversion System reducing the Navy's reliance on AUTODIN. Tested and evaluated the commercial Defense Message Distribution System for economical/effective implementation of DMS. Provided life cycle support for Navy transition and target DMS architecture. (Oct 98 - Sep 99, $6.562M)

o Provided test, evaluation and certification of C4I systems ensuring interoperability within and between systems, the sustaining base, the National Command Authority, Service echelons and allies. Tested first European Asynchronous Transfer Mode (ATM) architecture implementation. Certified 6 Defense Red Switch Network software versions for specification compliance. Performed 15 Tactical Data Information Link (TADIL) A/B/J interoperability certification/validation tests. Certified 28 US Forces weapons platforms for TADIL conformance. Completed UHF DAMA SATCOM MIL-STD testing and issued 32 standards conformance certifications. Developed testing capability for revised UHF DAMA MIL-STD-188-series testing. Completed Deployed Internetworking Test (DIT) which included Tactical DMS assessment, message and circuit switch software testing, and USPACOM's tactical command system interoperability certification test. (Oct 98 - Sep 99, $6.344M)

Exhibit R-2a, RDT&E Project Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** C3 Interoperability/0208045K						**PROJECT NAME AND NUMBER** Test and Evaluation/T30		
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		19.971	15.314	26.326	26.772	27.233	27.542	27.756	Contg	Contg

FY 1999 Accomplishments continued:

? Provided interoperability operational and technical expertise and advice to the CINCs, Services, and Joint Agencies during real world contingencies, day to day operations and exercises. Provided quarterly JITC Warfighter C4I Lessons Learned Report in paper copy (over 1000 customers) and on the NIPRNET/SIPRNET addressing interoperability problems and providing respective solutions. Provided 157 rapid support answers (i.e., hotline calls) to the CINCs, Services, and Joint and Federal agencies. Of the 157 calls, 9 resulted in a test, 17 supported real world contingencies (i.e., ALLIED FORCE, SOUTHERN WATCH and DESERT FOX), and 18 supported Joint exercises (COBRA GOLD, Marine exercises, ROVING SANDS, COMBINED ENDEAVOR, FORCE DEFENSE, and TANDEM THRUST). Provided pre-exercise and on site interoperability support for 8 Joint exercises (i.e., FOAL EAGLE, ASCIET, ROVING SANDS, FUENTSAS DEFENSAS, JOINT TASK FORCE, COBRA GOLD, COMBINED ENDEAVOR, and TANDEM THRUST). (Oct 98 - Sep 99, $3.365M)

? Provided essential test and evaluation support to the Operational Evaluations of all CINC's, components and other unified commands in preparing for, executing, and reporting Y2K operational evaluation status of critical "Thin Line" systems. Support included: essential systems integration testing of the Global Command and Control System and electronic commerce systems; and infrastructure improvements and upgrades, development of critical system and real-world Y2K contingency plans, and installation of key communications devices and software tool sets. (Sep 99, $3.7M)
o Total $19.971M

FY 2000 Plans:

o Provide test and evaluation of DoD=s major C4I programs, such as DMS, GCCS, and DISN, by certifying critical requirements are supported by interoperable functionalities. Evaluate systems' operational effectiveness and suitability for fielding by documenting critical operational issues through an appropriate test, and referring results to the decision authority. (Oct 99 - Sep 00, $4.259M)

Exhibit R-2a, RDT&E Project Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** C3 Interoperability/0208045K				**PROJECT NAME AND NUMBER** Test and Evaluation/T30				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		19.971	15.314	26.326	26.772	27.233	27.542	27.756	Contg	Contg

FY 2000 Plans continued:
o Support production decisions of the Defense Acquisition Board (DAB) and fielding decisions of the Chairman, Joint Chiefs of Staff (CJCS) by providing test, evaluation and certification of C4I systems ensuring interoperability within and between systems, the sustaining base, the National Command Authority, and Service echelons.
(Oct 99 - Sep 00, $4.387M)

o Provide technical and operational support and expertise to CINCs, Services and Agencies during exercises, real world contingencies and operational assessments. Provide Lessons Learned Reports on NIPRNET/SIPRNET addressing current interoperability problems and solutions. (Oct 99 - Sep 00, $2.162M)

o Provide support for testing, training and implementation of the Navy's DMS Target systems. Evaluate DMS components within the Navy's existing and target architecture, providing results and lessons learned. (Oct 99 – Sep 00, $4.506M)
o Total $15.314M

FY 2001 Plans:
o Provide test and evaluation of DoD=s major C4I programs, such as DMS, GCCS, and DISN, by certifying critical requirements are supported by interoperable functionalities. Evaluate systems' operational effectiveness and suitability for fielding by documenting critical operational issues through an appropriate test, and referring results to the decision authority. (Oct 00 - Sep 01, $6.845M)

o Support production decisions of the Defense Acquisition Board (DAB) and fielding decisions of the Chairman, Joint Chiefs of Staff (CJCS) by providing test, evaluation and certification of C4I systems ensuring interoperability within and between systems, the sustaining base, the National Command Authority, and Service echelons.
(Oct 00 - Sep 01, $9.214M)

o Provide technical and operational support and expertise to CINCs, Services and Agencies during exercises, real world contingencies and operational assessments. Provide Lessons Learned Reports on NIPRNET/SIPRNET addressing current interoperability problems and solutions. (Oct 00 - Sep 01, $5.002M)

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** C3 Interoperability/0208045K	**PROJECT NAME AND NUMBER** Test and Evaluation/T30	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		19.971	15.314	26.326	26.772	27.233	27.542	27.756	Contg	Contg

FY 2001 Plans continued:
o Provide support for testing, training and implementation of the Navy's DMS Target systems. Evaluate DMS components within the Navy's existing and target architecture, providing results and lessons learned. (Oct 00 – Sep 01, $5.265M)
o Total $26.326M

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: This project is supported by a competitively awarded, non-personal services contract composed of three prime contracts with multiple sub-contracts. The contracts, which are cost plus award fee, provide maximum flexibility in assignment of tasks for cost and technical effectiveness, and allow for expansion and contraction of staff years as workload expands and contracts.

D. Schedule Profile:

FY 1999 – FY 2005

1st Quarter to 4th Quarter

Joint/Combined Tactical Data Information Link/U.S. Message Text Format (TADIL/USMTF) certifications; Operational Test and Evaluation of new releases of DMS and GCCS; test and evaluation of DISN and systems interfacing with DISN; contingency and exercise support; Lessons Learned Reports and hotline technical support; operational assessments and implementations of Navy transition and target systems; interoperability testing and certification of scheduled Joint and Combined C4I systems.

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** C3 Interoperability/0208045K	**PROJECT NAME AND NUMBER** Test and Evaluation/T30

Test and Evaluation

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering/Technical Services	CPAF/ C	TRW Ft Hua, AZ	5.099	1.895	03/00	2.895	03/01	Contg	Contg	11.345
	CPAF/ C	Interop Ft Hua, AZ	5.129	2.009	03/00	6.719	03/01	Contg	Contg	20.864
	CPAF/ C	Validity Ft Hua, AZ	6.006	2.238	03/00	2.938	03/01	Contg	Contg	13.000
Subtotal Contracts				6.142		12.552				
In house				9.172		13.774				
Total Project				15.314		26.326				

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** C3 Interoperability/0208045K	**PROJECT NAME AND NUMBER** Major Range Test Facility Base/T40	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		9.109	8.315	10.746	11.043	11.366	11.763	12.272	Contg	Contg

A. Mission Description & Budget Item Justification: This project provides resources to operate DISA=s Joint Interoperability Test Command (JITC) which is a member of DOD=s Major Range Test Facility Base (MRTFB). Indirect operation/maintenance expenses, testbed maintenance, base operating support and facility and logistics support are included in this project.

FY 1999 Accomplishments:
o Recurring maintenance of JITC=s automated systems to facilitate test and evaluation and maximize use of test assets; maintained the Corporate Database and other microcomputer applications to provide cost accounting reports to track and catalog customer expenses for internal and external processes and customer disclosure; continued to develop automated support for management of contracts, manpower and fiscal resources; provided base operations support to JITC=s testing mission. (Oct 98 - Sep 99, $1.560M)
o Maintained and operated the JITC test facilities at Fort Huachuca, AZ; VA and Indianhead, MD for DOD use; provided other indirect mission support. (Oct 98 - Sep 99, $7.549M)
o Total $9.109M

FY 2000 Plans:
o Recurring maintenance of JITC=s automated systems to facilitate test and evaluation and maximize use of test assets; maintain the Corporate Database and other microcomputer applications to provide cost accounting reports to track and catalog customer expenses for internal and external processes and customer disclosure; continue to develop automated support for management of contracts, manpower and fiscal resources; provide base operations business support to JITC=s testing mission. (Oct 99 - Sep 00, $1.330M)
o Maintain and operate the JITC test facilities at Fort Huachuca, AZ for DOD use; provide other indirect test mission support. (Oct 99 - Sep 00, $4.407M)
o Maintain and operate the JITC test facilities at Indianhead, MD for DOD use; provide other indirect test mission support. (Oct 99 - Sep 00, $2.578M)
o Total $8.315M

Exhibit R-2a, RDT&E Project Justification			**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** C3 Interoperability/0208045K	**PROJECT NAME AND NUMBER** Major Range Test Facility Base/T40	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		9.109	8.315	10.746	11.043	11.366	11.763	12.272	Contg	Contg

FY 2001 Plans:
o Recurring maintenance of JITC's automated systems to facilitate test and evaluation and maximize use of test assets; maintain the Corporate Database and other microcomputer applications to provide cost accounting reports to track and catalog customer expenses for internal and external processes and customer disclosure; continue to develop automated support for management of contracts, manpower and fiscal resources; provide base operations business support to JITC's testing mission. (Oct 00 - Sep 01, $1.612M)
o Maintain and operate the JITC test facilities at Fort Huachuca, AZ for DOD use; provide other indirect test mission support. (Oct 00 - Sep 01, $5.910M)
o Maintain and operate the JITC test facilities at Indianhead, MD for DOD use; provide other indirect test mission support. (Oct 00 - Sep 01, $3.224M)
o Total $10.746M

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: This project is supported by a competitively awarded, non-personal services contract composed of three prime contracts with multiple sub-contracts. The contracts, which are cost plus award fee, provide maximum flexibility on assignment of tasks for cost and technical effectiveness, and allow for expansion and contraction of staff years as workload expands and contracts.

D. Schedule Profile: FY 1999 – FY 2005
1st – 4th Quarter: Host Base Operations Support, MRTFB mandated cost accounting information systems, overhead supporting MRTFB, and testbed operations and maintenance.

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** C3 Interoperability/0208045K	**PROJECT NAME AND NUMBER** Major Range Test Facility Base (MRTFB)/T40

Major Range Test Facility Base (MRTFB)

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering/Technical Services	CPAF/ C	TRW Ft Hua, AZ	.314	.226	03/00	.237	03/01	Contg	Contg	1.026
	CPAF/ C	Interop Ft Hua, AZ	7.270	2.630	03/00	3.792	03/01	Contg	Contg	17.500
	CPAF/ C	Validity Ft Hua, AZ	1.141	.470	03/00	.592	03/01	Contg	Contg	2.895
Subtotal Contracts				3.326		4.621				
In-house				4.989		6.125				
Total Project				8.315		10.746				

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** National Military Command System (NMCS) Support/0302016K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element		.642	.608	.641	.649	.674	.689	.704	Contg	Contg
NMCS Command Center Engineering/S32		.642	.608	.641	.649	.674	.689	.704	Contg	Contg

A. Mission Description and Budget Item Justification:

This program provides concept development, requirements definition, technical specifications, proof-of-concept testing, rapid prototyping, technology insertions, systems engineering and integration, and technical assessments for NMCS Command and Control (C2) systems. This support provides informed, decision-making linkage between the National Command Authorities (NCA) and the Commanders-in-Chief of the Unified and Specified Commands. This engineering draws upon improved C2 methodologies and technology insertion opportunities to meet the command, control and information requirements of NCA and CINCs for all crises and security threats involving US military forces. These efforts emphasize interoperability and are designed to contribute directly to the achievement of the global C4I infrastructure. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

FY99 Accomplishments:

- Automated Configuration Management for Joint Staff (JS) and National Military Command Center (NMCC) (1^{st} Qtr – 4^{th} Qtr; $144K).
- NMCC Site R and STRATCOM planning (1^{st} Qtr – 4^{th} Qtr; $104K).
- NMCS Engineering Support for integration of DII elements (1^{st} Qtr – 4^{th} Qtr; $150K).
- NMCC Engineering of Com and ADP systems (1^{st} Qtr – 4^{th} Qtr; $244K).
- Total $.642M

FY00 Plans:

- Continue migration of NMCS systems to DII Common Operating Environment (COE) (1^{st} Qtr – 4^{th} Qtr; $57K).
- Engineering Test & Evaluation (ET&E) of NMCS upgrades (1^{st} Qtr – 4^{th} Qtr; $500K).
- Plan and engineer NMCC integration improvements (1^{st} Qtr – 4^{th} Qtr; $51K).
- Total $.608M

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** National Military Command System (NMCS) Support/0302016K

FY01 Plans:
- o ET&E for NMCC systems relocation (1st Qtr – 4th Qtr; $124K).
- o Continue engineering support for NMCC systems improvements/upgrades (1st Qtr – 4th Qtr; $263K).
- o Continue engineering support for SITE R systems improvements/upgrades (1st Qtr – 4th Qtr; $254K).
- o Total $.641M

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY2000)	1.186	.613	.645
Appropriated Value	1.189	.613	
Adjustments to Appropriated Value	-.547	-.003	
Congressional Rescission		-.002	
Adjustments to Budget Year since FY2000 President's Budget			-.004
Current Budget Submit/President's Budget (FY2001)	.642	.608	.641

Change Summary Explanation:

FY99 change due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming.

FY00 change reflects government-wide rescission and required offset to fund higher priority initiatives.

FY01 change due to revised fiscal guidance.

C. Other Program Funding Summary:

Operation & Maintenance	FY99	FY00	FY01	FY02	FY03	FY04	FY05	To Complete
	.460	.164	.478	.543	.570	.537	.408	Contg

D. Acquisition Strategy: Raytheon E-Systems, Arlington, VA; Logicon, Arlington, VA; Booz-Allen, Hamilton, Bethesda, MD; and FGM, Herndon, VA

E. Schedule Profile:

FY 99	4th Qtr	Integrated National C2 Systems; NMCC relocation engineering
	4th Qtr	Engineering Test and Evaluation of NMCS systems
FY00-05	4th Qtr	Integrate National C2 Systems; NMCC relocation engineering
	4th Qtr	Engineering Test and Evaluation of NMCS systems

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Defense Information Infrastructure Engineering & Integration/PE 0302019K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total PE Cost: PE 0302019K		5.584	3.421*	5.704	5.961	6.127	6.660	7.097	Contg	Contg
DII Systems Engineering and Support/T62		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg
Modeling & Simulation/E62		4.009	2.590	4.475	4.697	4.826	5.322	5.721	Contg	Contg

A. Mission Description and Budget Item Justification: This program element funds efforts involving the following areas: the development and fielding of the Defense Information Infrastructure (DII) Common Operating Enviroment (COE), engineering support of the DII including resolution of critical interoperability and technical integration issues, and the assessment of C4I initiatives that reside on the DII COE to ensure compatibility, interoperability and technical integration. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

B. Program Change Summary:

	FY 99	FY 00	FY 01
Previous President's Budget (FY 2000)	4.777	5.316	5.521
Appropriated Value	4.975	5.316	
Adjustments to Appropriated Value	.609	-1.880	
Congressional Rescission		-.015	
Adjustments to Budget Year Since FY 2000 President's Budget			.183
Current Budget Submit/President's Budget (FY 2001)	5.584	3.421	5.704

* FY 2000 funding reduction used for offset to fund higher priority Departmental initiatives

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** Defense Information Infrastructure Engineering & Integration/PE 0302019K

Change Summary Explanation:

FY 1999 change due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming.

FY 2000 reduction is a result of a required offset to fund higher priority Departmental initiatives.

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K		**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg

A. Mission Description and Budget Item Justification: Efforts under this project will strengthen critical Defense Information Infrastructure (DII) foundation technologies and programs through application of precise, short-term, technical, engineering and integration expertise. Provides expertise in support of the major DII components, which include: DII Common Operating Environment (COE), COE Data, Defense Information System Network (DISN), Defense Message System (DMS) and medium grade messaging, Global Combat Support System (GCSS), Global Command and Control System (GCCS), DoD Directory, DII Public Key Infrastructure (PKI), DII Control Concept (DIICC), enterprise management, Information Assurance (IA), and other related components. This project supports the definition and implementation of various aspects of evolving the DII. The evolution of the DII requires coordinated implementation of the DII components to form a coherent global information grid. This project supports definition of the common environments, developing system architecture constructs for the DII and components, providing engineering design and guidance for component evolution, including incorporation of new technology from industry, and implementing the infrastructure capability. Subtasks are assigned based on need to address specific technical problems, mitigate risks, and take advantage of cross-program synergies.

FY1999 Accomplishments:

- o Component Support and DII Integration
  Harmonized interfaces with service/agency technical implementations;
  Rejuvenated chief engineers panel for cross-program integration;
  COE V5.0 Risk assessment. (1st Qtr - 4th Qtr; $705K)

- o Directories Support
  Analysis of DoD directories needs and vendor directories products, planned for piloting directory services, and developed plans/schema for near term medium-grade messaging pilot directory. (1st Qtr - 4th Qtr; $202K)

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K	**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg

FY1999 Accomplishments (Continued):

- o Joint Operational and Planning Execution System (JOPES) 2000
  - Established project team – Began Architecture/Schema Tiger Team;
  - Completed tiger team effort;
  - Refined database Schema. (1st Qtr – 4th Qtr; $276K)
- o Satellite Communication (SATCOM) Support
  - Defined two Transponder Media Mix options;
  - Developed Hybrid Processed/Transponded concept;
  - Use of analysis. (2nd Qtr – 4th Qtr; $140K)
- o GCCS Y2K Support
  - GCCS V3.X Y2K risk analysis and fixes;
  - Concluded Y2K analysis. (1st Qtr – 4th Qtr; $43K)
- o Joint DII Control System Deployable (JDIICS-D)
  - Evaluated information assurance (IA) tools for JDIICS;
  - Defined CONOPS for tools usage in JDIICS;
  - Built proof-of-concept prototype. (3rd Qtr – 4th Qtr; $76K)
- o National Missile Defense (NMD)
  - Refined cost estimate for NMD implementation. (4th Qtr; $133K)
- o Total $1.575M

FY2000 Plans:

Technical support activities are those needed to develop engineering concepts, provide superior scientific and systems analyses, assess systems and system component designs, development, and improvement programs. The detail of any given engineering task depends on the status of each of the components at the particular point in evolution of the global information grid.

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K		**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg

FY2000 Plans (Continued):

- o DII Component Support
  Address new DII component requirements to include architectures, processes, and supporting analyses. (1st Qtr – 4th Qtr; $214K)
- o DII Integration
  Technical, operational and schedule component integration. (1st Qtr – 4th Qtr; $247K)
- o GCSS and GCCS Integration
  Begin technical and operational integration of GCCS and GCSS;
  Migrate JOPES 2000. (1st Qtr – 4th Qtr; $270K)
- o Cross Program Integration Engineering
  Cross-corporate and sponsor-base harmonization;
  Creation of fora for information exchange. (1st Qtr – 4th Qtr; 100K)
- o Total $.831M

FY2001 Plans:

The exact detail of any given engineering task depends on the status of each of the components at the particular point in evolution of the global information grid. Technical support activities are those needed to develop engineering concepts, provide superior scientific and systems analyses, assess systems and system component designs, development, and improvement programs.

- o DII Component Support
  Address inclusion of mission area domain components;
  Address new DII component requirements to include architectures, processes, and supporting analyses.
  (1st Qtr – 4th Qtr; $496K)

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K		**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg

FY2001 Plans (Continued):

- o DII Integration
  Technical, operational and schedule component integration;
  Enhance cross-program interoperability. (1st Qtr – 4th Qtr; $415K)
- o GCSS and GCCS Integration
  Continue technical and operational integration of GCCS and GCSS. (1st Qtr – 4th Qtr; $218K)
- o Cross Program Integration Engineering
  Cross-corporate and sponsor-base harmonization;
  Creation of fora for information exchange. (1st Qtr – 4th Qtr; $100K)
- o Total $1.229M

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: MITRE, McLean, VA.

D. Schedule Profile
FY99 – Component support & DII integration 1st Qtr – 4th Qtr
Directories support 1st Qtr – 4th Qtr
Joint Operational and Planning Execution System (JOPES) 2000 1st Qtr – 4th Qtr
Satellite Communication (SATCOM) Support 2nd Qtr – 4th Qtr
GCCS Y2K Support 1st Qtr – 2nd Qtr
Joint DII Control System Deployable (JDIICS-D) 3rd Qtr – 4th Qtr
National Missile Defense (NMD) 4th Qtr

Exhibit R-2a, RDT&E Project Justification									**DATE:** February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** DII Engineering & Integration/0302019K							**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62	
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.575	.831	1.229	1.264	1.301	1.338	1.376	Contg	Contg

D. Schedule Profile (Continued):

FY00 – DII component support 1st Qtr – 4th Qtr
DII integration 1st Qtr – 4th Qtr
GCSS and GCCS integration 1st Qtr – 4th Qtr
Cross program integration engineering 1st Qtr – 4th Qtr

FY01 – DII component support 1st Qtr – 4th Qtr
DII integration 1st Qtr – 4th Qtr
GCSS and GCCS integration 1st Qtr – 4th Qtr
Cross program integration engineering 1st Qtr – 4th Qtr

FY02 – FY 05
Continue to support the definition and implementation of various aspects of evolving the DII. The evolution of the DII requires coordinated implementation of the DII components to form a coherent global information grid. This project supports definition of the common environments, developing system architecture constructs for the DII and components, providing engineering design and guidance for component evolution, including incorporation of new technology from industry, and implementing the infrastructure capability. Subtasks are assigned based on need to address specific technical problems, mitigate risks, and take advantage of cross-program synergies.

Exhibit R-3 Cost Analysis		DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K	**PROJECT NAME AND NUMBER** DII Systems Engineering and Support/T62

Support Costs:

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering/Tech Svcs	FFRDC	MITRE, Mclean, VA	1.575	.831	1/00	1.229	1/01	Contg	Contg	3.639

Exhibit R-2a, RDT&E Project Justification									**DATE:** February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** DII Engineering & Integration/0302019K						**PROJECT NAME AND NUMBER** Modeling & Simulation/E62		
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		4.009	2.590	4.475	4.697	4.826	5.322	5.721	Contg	Contg

A. Mission Description and Budget Item Justification: This effort supports the DOD communications planning and investment strategy for the successful deployment of DOD information systems by performing a broad spectrum of activities in support of C4I programs. DISA has the lead in DOD for providing modeling and simulation to DOD decision makers—from the OSD level to the war fighter—with services and a suite of tools capable of identifying key decision points that impact DOD command and control information systems. This work is essential to achieve the DISA goal of quality information services at an affordable cost by supporting cost effective products and services through modeling, simulation and assessment to support system: planning, engineering, implementation/upgrade, operations, training and security. These services and tools will provide modeling and analysis support: 1)to the key DISA programs of DMS, DISN, Public Key Infrastructure (PKI) and Electronic Commerce (EC); 2) to assess the DII's ability to support CINC's, JCS, Services, and other Federal agencies' current and emerging C4ISR (surveillance and reconnaissance) mission driven information requirements; 3) enhance the functionality of GOTS tools to engender an integrated environment in support of the modeling and simulation efforts of DISN, DMS, IA, GCSS, GCCS, and the DII; 4) investigate methods linking these models with other GOTS used in information network analysis; and 5) explore the available COTS tools appropriate for developing models that will be used for sizing and performance assessment of information system architecture.

FY1999 Accomplishments:

- o DISA Program Support provided modeling and analysis support to the key DISA programs and initiatives of DMS, GCCS, DISN and EC. ($1,875K) (1st Qtr – 4th Qtr)

- o Warfighter and CINC Support provided modeling and simulation assessment to evaluate communications and related systems to support CINC's, JCS, Services, and other Federal agencies' current and emerging C4ISR mission driven information requirements. ($1,061K) (1st Qtr – 4th Qtr)

- o C3 Community Support provided DOD decision makers--from the OSD level to the warfighter-—with a suite of tools capable of identifying key decision points required to carry out their mission in the most effective way. ($1,073K) (1st Qtr – 4th Qtr)
- o Total $4.009M

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K		**PROJECT NAME AND NUMBER** Modeling & Simulation/E62

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		4.009	2.590	4.475	4.697	4.826	5.322	5.721	Contg	Contg

FY2000 Plans:

- o DISA Program Support will provide (a) DISN performance assessments for existing and transitioning networks, applications, technology and develop recommendations for network performance improvement, survivability and reliability; (b) assess end-to-end system performance assessment for DMS, PKI and EC; (c) build new capability into models/tools to support these assessments; and (d) develop phase III of GCSS for GCCS integration with exercises. ($1,605K) (1st Qtr – 4th Qtr).

- o Warfighter and CINC Support will provide (a) wartime performance and vulnerability assessments of the Korean communications infrastructure, (b) impact assessments of new technology programs, such as Global Broadcast Service (GBS), Information Dissemination Management (IDM), and Mobile User Objective System (MUOS), (c) performance assessments of DISN networks' capability to support dissemination of National Imagery and Mapping Agency (NIMA) products, and (d) development of message delay curves for the Joint Warfare System (JWARS). ($415K)(1st Qtr – 4th Qtr).

- o C3 Community Support Modeling and Simulation (M&S) Tools will evaluate communication and related systems of military campaign outcomes by (a) ensuring availability of network models commensurate with the evolving DISN and technology; (b) enhancing M&S tools to support DISA Vision 2010 objective; (c) enhancing M&S capability to reflect the evolving DISN network and changing network technology development and incremental builds to an integrated M&S tool based on COTS products; (d) modeling DISN network; (e)supporting business case studies; (f) providing performance assessment of the DISN Asynchronous Transfer Mode (ATM)network; and (g) developing a system administrator test for GCCS operators. ($570K) (1st Qtr – 4th Qtr).

- o Total $2.590M

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K		**PROJECT NAME AND NUMBER** Modeling & Simulation/E62

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		4.009	2.590	4.475	4.697	4.826	5.322	5.721	Contg	Contg

FY2001 Plans:

- DISA Program Support will (a) continue DISN performance assessments for existing and transitioning networks, applications, technology and develop recommendations for network performance improvement, survivability and reliability; (b) assess end-to-end system performance assessment for DMS, PKI EC, GCCS, and (c) build new capability into models/tools to support these assessments; (d) initiate the collection/analysis of operational system performance data and (e) continue GCCS integration with CINC exercises and refine Simulation Linkage (SIMLINK) and Global Telecommunication Satellite System (GTSS) based on CINC requirements. ($2,775K) (1st Qtr – 4th Qtr).

- Warfighter and CINC support will provide: (a) wartime performance and vulnerability assessments of the DISN networks for the warfighting CINCs and (b) assessments of the impact of new technology programs (e.g., Global Broadcast Service) on existing or planned DISN networks. ($716K) (1st Qtr – 4th Qtr).

- C3 Community Support Modeling and Simulation (M&S) Tools will: (a) continue to enhance M&S capability to reflect the evolving DISN network;(b) continue development and incremental builds to an integrated M&S tool based on COTS products end-to-end;(c) enhance existing COTS M&S tools to support network performance modeling and assessment, reflecting DISN user requirements; (d) evaluate the functionality of tools for integrating C4I concepts into network modeling/analyses/assessments; (e) enhance M&S tools to support DISA Vision 2010 objectives. ($984K)(1st Qtr – 4th Qtr).

- Total $4.475

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K	**PROJECT NAME AND NUMBER** Modeling & Simulation/E62	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		4.009	2.590	4.475	4.697	4.826	5.322	5.721	Contg	Contg

B. Other Program Funding Summary: O&M funding

FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	To Complete
6.804	6.455	7.213	7.801	8.346	8.481	8.617	Contg

C. Acquisition Strategy:
Work will continue under existing contract vehicles.

D. Schedule Profile

FY99 – M&S support to the key DISA programs, 1st Qtr – 4th Qtr
Modeling and simulation assessment to support CINC's, JCS, Services, and other Federal agencies, 1st Qtr – 4th Qtr
Identify key decision points for decision makers from the OSD level to the warfighter, 1st Qtr – 4th Qtr
FY00 – Support key DISA programs, (a) DISN performance assessments and (b) support to Electronic Document Access (EDA) and Public Key Infrastructure (PKI), 1st Qtr – 4th Qtr
Support JWARS and Joint Simulation System (JSIMS), 1st Qtr – 4th Qtr
Identify key decision points by ensuring availability of network models, 1st Qtr – 4th Qtr
FY01 – Support to the key DISA programs, especially integrated switching and transmission, 1st Qtr – 4th Qtr
Provide post-IOC development and oversight of Joint C2 representation and C2/JSIMS interfaces, 1st Qtr – 4th Qtr
Enhance M&S capability to reflect the evolving DISN network, 1st Qtr – 4th Qtr
FY02 – FY05
Continue to provide M&S support to the key DISA programs, 1st Qtr – 4th Qtr
Continue to provide M&S assessment to CINC's, JCS, Services, and other Federal agencies, 1st Qtr – 4th Qtr
Continue to identify key decision points for decision makers, 1st Qtr – 4th Qtr

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** DII Engineering & Integration/0302019K	**PROJECT NAME AND NUMBER** Modeling & Simulation/E62

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Modeling & Simulation	FFRDC	MITRE, McLean, Va	2.014	. 751	1/00	.860	1/01	Contg	Contg	3.625
	CPFF	SAIC Arlington, Va.	1.492	1.295	3/00	1.988	3/01	Contg	Contg	4.775
		Other	.503	.544	12/99	1.627	12/00	Contg	Contg	2.674
Subtotal Product Development			4.009	2.590		4.475				
Total Costs			4.009	2.590		4.475				

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** FEBRUARY 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Long Haul Communications/0303126K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element (PE)		11.469	1.306	1.416	1.440	1.470	1.502	1.535	Contg	Contg
DISN Systems Engineering Support/T82		1.609	1.306	1.416	1.440	1.470	1.502	1.535	Contg	Contg
Defense Information Systems Network Acquisition/H20		9.860	0	0	0	0	0	0	0	9.860

A. Mission Description and Budget Item Justification: This program element funds system engineering for the Defense Information Systems Network (DISN) which provides defense-wide communications for the day-to-day operations of the DOD and serves as the core of DOD wartime communications for the National Command Authority (NCA), the Joint Chiefs of Staff (JCS), the Commanders-in Chief (CINCs), and other critical users. It provides for the engineering to consolidate the operational communications networks into DISN. This PE funds the critical and essential engineering required to use commercial equipment and service offerings, to implement the rapidly advancing communications technology, and to update the network design tools so as to continue providing tremendous cost savings, and to continue offering valuable new cost effective information technology capabilities and services to customers. It provides for the cost effective development of needed information technology capabilities by targeting RDT&E efforts to DOD mission needs. This PE supports the military requirements identified by Joint Mission Needs Statement (JMNS) and Joint Capstone Requirements Document (JCRD). The program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** Long Haul Communications/0303126K

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY 2000)	11.510	1.316	1.425
Appropriated Value	11.561	1.316	
Adjustments to Appropriated Value	-.092	-.006	
Congressional Rescission		-.004	
Adjustments to Budget Year since FY 2000 President's Budget			-.009
Current Budget Submission/President's Budget (FY 2001)	11.469	1.306	1.416

Change Summary Explanation:

FY 99 and FY 00 changes due to below threshold reprogramming.

FY 01 reduction due to revised fiscal guidance.

Exhibit R-2a, RDT&E Project Justification								DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Long Haul Communications/0303126K					**PROJECT NAME AND NUMBER** DISN Systems Engineering Support/T82			
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.609	1.306	1.416	1.440	1.470	1.502	1.535	Contg	Contg

A. Mission Description and Budget Item Justification: This project funds the critical and essential engineering to continue providing cost savings and to offer valuable new cost-effective information technology capabilities and services to customers. It funds systems engineering to reduce the risks and delays of implementing new communications technologies by performing assessments and proof of concept implementations. It also provides engineering to develop/enhance computer-aided network topology design, analysis and modeling tools to: (a) improve performance and/or reduce cost of operational networks to satisfy customer requirements at lowest cost, (b) analyze/solve problems in operational networks and (c) produce cost-efficient designs for future networks using new technologies.

FY99 Accomplishments:

- o Engineered the insertion of technology into the Defense Information Infrastructure (DII)(1st Qtr – 4th Qtr; $291K).
- o Performed Engineering Support for Network Engineering Assessment Facility (NEAF) (1st Qtr – 4th Qtr, $232K).
- o Implemented an Information Dissemination Management (IDM)/Global Broadcast System (GBS)/DISN Integration Testbed in the NEAF and Performed Risk Reduction Testing (1st Qtr – 4th Qtr; $505K).
- o Upgraded a portion of workstations, LAN, and WAN hardware & system software as requirements/technology dictate (1st Qtr – 4th Qtr; $120K).
- o Developed network topology design algorithms, heuristics and software based on a government prioritized list of enhancements (e.g., specific backbone switches and edge devices selected for DISN Objective ATM network). Develop a DISN Objective ATM private line network topology design and analysis (1st Qtr –4th Qtr; $461K).

- o Total $1.609M

Exhibit R-2a, RDT&E Project Justification			DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Long Haul Communications/0303126K		**PROJECT NAME AND NUMBER** DISN Systems Engineering Support/T82

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.609	1.306	1.416	1.440	1.470	1.502	1.535	Contg	Contg

FY00 Plans:

- o Engineer the insertion of technology into the DII (1st Qtr –4th Qtr; $369K).
- o Engineering support for Network Engineering Assessment Facility (NEAF) (1st Qtr – 4th Qtr; $250K).
- o Upgrade a portion of workstations, LAN, and WAN hardware & system software as requirements/technology dictate. (1st Qtr – 4th Qtr; $100K).
- o Develop network topology design algorithms, heuristics and software based on a government prioritized list of enhancements (e.g., specific DISN Service Directory Nodes (SDN) Edge devices) (1st Qtr – 4th Qtr; $587K).
- o Total $1.306M

FY01 Plans:

- o Engineer the insertion of advanced network technology into the DII (e.g., wave division multiplexing and optical switching) (1st Qtr – 4th Qtr; $395K).
- o Engineering support for Network Engineering Assessment Facility (NEAF) (1st Qtr – 4th Qtr; $275K).
- o Upgrade workstations, LAN, and WAN hardware & system software (1st Qtr - 4th Qtr; $100K).
- o Develop network topology design algorithms, heuristics and software based on a government prioritized list (1st Qtr – 4th Qtr; $646K).
- o Total $1.416M

B. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Operation & Maintenance	4.056	1.515	1.471	1.487	1.515	1.549	1.584

Exhibit R-2a, RDT&E Project Justification									DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Long Haul Communications/0303126K				**PROJECT NAME AND NUMBER** DISN Systems Engineering Support/T82				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.609	1.306	1.416	1.440	1.470	1.502	1.535	Contg	Contg

C. Acquisition Strategy: General Services Administration, Washington, DC; SETA Corporation, McLean, VA.

D. Schedule Profile:

FY99	4th Qtr	Voice over ATM technology implementation into DII
	4th Qtr	ATM Cell Encryption technology implementation into DII
	4th Qtr	Release #1 of ATM COTS computer-aided network topology design, analysis and modeling tool
FY00	4th Qtr	Release #2 of ATM COTS computer-aided network topology design, analysis and modeling tool
FY01	4th Qtr	Future Technology design, analysis, modeling tools, and technology insertion into the DII (e.g., wavelength multiplexing & optical switching)
FY02 – FY05		
	4th Qtr	Future Technology design, analysis, modeling tools, and technology insertion into the DII (e.g., wavelength multiplexing & optical switching)

Exhibit R-3 Cost Analysis		**DATE:** FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Long Haul Communications/PE 0303126K	**PROJECT NAME AND NUMBER** DISN Systems Engineering Support/T82

Support Costs:

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	CPAF/ CPIF	Multiple	1.609	1.306	10/99	1.416	10/00	Contg	Contg	N/A

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Support of the National Communications System/P.E. 0303127K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element		4.386	4.242	5.019	5.088	5.171	5.285	5.400	Contg	Contg
Enhanced Satellite Capability/N092		.420	.420	0*	0	0	0	0	Contg	Contg
Interoperability/N088		1.700	1.619	2.339	2.389	2.456	2.450	2.443	Contg	Contg
Information Assurance/N094		.525	.525	.530	.540	.550	.593	.636	Contg	Contg
Advanced Intelligent Network/N091		1.281	1.240	0*	0	0	0	0	Contg	Contg
NS/EP Telecommunications Integration Support/N095		.460	.438	0*	0	0	0	0	Contg	Contg
NS/EP Programs/N709		0	0	2.150*	2.159	2.165	2.242	2.321	Contg	Contg

A. Mission Description and Budget Item Justification

This program element supports Executive Order 12472 of 3 April 1984 which assigns the NCS the mission of assisting the President, the National Security Council, the Office of Science and Technology Policy, and the Office of Management and Budget, in exercising their wartime and non-wartime telecommunications functions and responsibilities, and coordinating the planning for, and provisioning of, National Security and Emergency Preparedness (NS/EP) telecommunications for the federal government under all circumstances. To attain this objective, there are several National Security Decision Directives which provide additional guidance to the NCS which require that initiatives be developed that will improve the survivability and interoperability of the commercial telecommunications systems that support national security and emergency preparedness requirements, enhance the potential NS/EP functionality of U.S. commercial satellites, and provide communications support for Government agencies which have responsibilities to carry out their essential functions in any emergency. Enhanced Satellite Capability explores developing satellite technologies and applications

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** Support of the National Communications System/P.E. 0303127K

which include experiments with NASA's Advanced Communications Technology Satellite (ACTS); secure voice experiments over American Mobile Satellite Corporation Mobile Satellite (AMSAT), and the analysis of the newly proposed low earth systems. Interoperability supports the Federal Telecommunications Standards Program, and ensures interoperability among emerging government communications systems. Information Assurance supports the Public Switched Network (PSN) in mitigating system vulnerabilities and related threats. Advanced Intelligent Network employs newly developed processing capabilities to tailor the extensive telecommunications resources of the PSN. NS/EP Telecommunications Integration provides a test and evaluation program to assess and evaluate the operational readiness and capabilities of NS/EP telecommunications programs, initiatives, and emerging technologies. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

B. Program Change Summary

	FY1999	FY2000	FY2001
Previous President's Budget (FY 2000)	4.415	4.274	5.049
Appropriated Value	4.428	4.274	
Adjustments to Appropriated Value	-.042	-.020	
Congressional Rescission		-.012	
Adjustments to Budget Year Since FY 2000 President's Budget			-.030
Current Budget Submit/President's Budget (FY2001)	4.386	4.242	5.019

Change Summary Explanation
Funding: FY99 change due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming.

FY00 change due to below threshold reprogramming.

FY01 change due to revised inflation rates.

* Effective FY 2001, Project N092 (Enhanced Satellite Capability), Project N091 (Advanced Intelligent Network) and Project N095 (NS/EP Telecommunications Integration Support) are merged into Project N709 (NS/EP Programs). This is not a new start.

Exhibit R-2a, RDT&E Project Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Support of the NCS/0303127K						**PROJECT NAME AND NUMBER** Interoperability/N088		
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.700	1.619	2.339	2.389	2.456	2.450	2.443	Contg	Contg

A. Mission Description & Budget Item Justification:
This project analyzes new telecommunications technologies and their effects on interoperability of government communications and conducts related technical evaluations and standards development. Supports the Federal Telecommunications Standards Program. Ensures interoperability among emerging government communication systems, including related information systems, by providing the required analyses to the NCS member organizations and other government agencies through the development of initial specification and correlation of standards for specific types of communication and related information systems; the design of initial automated methods for application of standards to systems; the refinement and evaluation of program objectives in evolving technology environment.

FY1999 Accomplishments:
- o Continued to resolve impediments to interoperability of systems supporting government communications. ($450K) (1st Qtr – 4th Qtr)
- o Continued to analyze network management and congestion control of emerging high-speed digital networks to identify and solve NS/EP communication issues. ($400K) (1st Qtr – 4th Qtr)
- o Continued to assess emerging technology and NS/EP applications. ($389K) (1st Qtr – 4th Qtr)
- o Developed analyses and contributions in support of the development of video teleconferencing and multi-media standards. ($461K) (1st Qtr – 4th Qtr)
- o Total $1.700M

FY2000 Plans:
- o Continue to develop technology, methods, and strategies to help ensure reliability of NS/EP communications through congested networks. ($580K) (1st Qtr – 4th Qtr)
- o Continue to develop procedures for analyzing interoperability of NS/EP communications in various stress scenarios and with various information formats (e.g. voice video conferencing). ($500K) (1st Qtr – 4th Qtr)
- o Continue to assess, evaluate, and extend advanced wireless communications technology and service for NS/EP communications. ($539K) (1st Qtr – 4th Qtr)
- o Total $1.619M

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Support of the NCS/0303127K	**PROJECT NAME AND NUMBER** Interoperability/N088	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.700	1.619	2.339	2.389	2.456	2.450	2.443	Contg	Contg

FY2001 Plans:

- o Continue to develop technology, methods, and strategies to help ensure reliability of NS/EP communications through congested networks. ($590K) (1st Qtr – 4th Qtr)
- o Continue to develop procedures for analyzing interoperability of NS/EP communications in various stress scenarios and with various information formats (e.g., voice video conferencing). ($562K) (1st Qtr – 4th Qtr)
- o Assess advanced, emerging technology for its use by or impact on security and reliability of NS/EP communications (e.g., photonic switching). ($525K) (1st Qtr – 4th Qtr)
- o Continue to assess, evaluate, and extend advanced wireless communications technology and services for NS/EP communications. ($662K) (1st Qtr – 4th Qtr)
- o Total $2.339M

B. Other Program Funding Summary:

	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	To Compl	Total Cost
O&M	2.368	3.115	2.900	2.950	3.000	3.050	3.050	Cont.	Cont.

Exhibit R-2a, RDT&E Project Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Support of the NCS/0303127K						**PROJECT NAME AND NUMBER** Interoperability/N088		
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.700	1.619	2.339	2.389	2.456	2.450	2.443	Contg	Contg

C. Acquisition Strategy:

Work will continue under existing contract vehicles and new reimbursable orders.

D. Schedule Profile

FY99 – 4th quarter: Receive reports and assessments of emerging technology for NS/EP applications.
FY00 – 4th quarter: Receive reports on IMT-2000 technology and standards for input to final ITU-T meetings this 4-year study period.
FY01 – 4th quarter: Receive reports on strategies for mitigating impact of congestion in high-speed networks (e.g., priority services, intelligent network rerouting).
FY02 – 4th quarter: Receive reports on end-to-end priority treatment of NS/EP communications in public networks.
FY03 – 4th quarter: Receive reports on impact on NS/EP communications of infrastructure transition to asynchronous transfer mode (ATM) switching.
FY04 – 4th quarter: Receive reports on advanced, emerging technologies affecting NS/EP communications.
FY05 – 4th quarter: Receive reports on advanced, emerging technologies affecting NS/EP communications.

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Support of the NCS/0303127K	**PROJECT NAME AND NUMBER** Interoperability/N088

Cost Category	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Technical Support	RO	NTIA Boulder, CO	2.927	.660	05/00	0	None	0	3.587	3.587
Technical Support	RO	NTIA Boulder, CO	0	0	None	.700	05/01	3.000	3.700	3.700
Technical Support	TBD	TBD	0	.200	05/00	.250	05/01	.600	1.050	1.050
Technical Support	RO	NIST Gathersburg, MD	.400	.200	04/00	.450	04/01	.500	1.550	1.550
Subtotal Support Costs			3.327	1.060		1.400		4.100	9.887	
Handbook Development	RO	NTIA Boulder, CO	.400	0	None	0	None	0	.400	.400
Report Development	CPAF/ 8(a)	COMtec Herndon, VA	.913	.359	07/00	.589	07/01	1.050	2.911	2.911
Report Development	CPFF/ 8(a)	ARTEL Reston, VA	.400	.200	05/00	.350	05/01	.600	1.550	1.550
Subtotal Product Development			1.713	.559		.939		1.650	4.861	
Total Cost			5.040	1.619		2.339		5.750	14.748	

Exhibit R-2a, RDT&E Project Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Support of the NCS/0303127K					**PROJECT NAME AND NUMBER** Advanced Intelligent Network/N091			
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.281	1.240	0*	0	0	0	0	Contg	Contg

A. Mission Description & Budget Item Justification

This project is required to employ newly developed processing capabilities to tailor the extensive telecommunications resources of the existing Public Switched Network (PSN), which includes the Local Exchange Carrier (LEC) and Inter Exchange Carrier (IEC) networks, thus enhancing connectivity and survivability of services for essential government users during periods of emergency. Advanced Intelligent Network (AIN) is an evolving PSN capability consisting of signaling systems, switches, computer processing, databases, and transmission media. This research will result in the utilization of these components, in a customized set of network services that, can be flexibly, rapidly, and cost effectively configured by customers upon request.

FY1999 Accomplishments:

- o Conducted AIN network interoperability testing across multiple carriers. ($601K) (1st Qtr – 4th Qtr)
- o Assessed AIN third party implementation for NS/EP. ($230K) (1st Qtr – 4th Qtr)
- o Determined AIN applications for Government Emergency Telecommunications Service (GETS) Network Management. ($450K) (1st Qtr – 4th Qtr)
- o Total $1.281M

FY2000 Plans:

- o Conduct AIN Next Generation Network testing across multiple testbeds. ($601K) (1st Qtr – 4th Qtr)
- o Assess AIN Network Evolution to data and wireless networks. ($230K) (1st Qtr – 4th Qtr)
- o Determine AIN interoperability with GETS and Wireless Priority Service (WPS) Program. ($409K) (1st Qtr – 4th Qtr)
- o Total $1.240M

FY2001 Plans:

* Effective FY 2001, this project is merged into Project N709, NS/EP Programs

Exhibit R-2a, RDT&E Project Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Support of the NCS/0303127K					**PROJECT NAME AND NUMBER** Advanced Intelligent Network/N091			
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.281	1.240	0	0	0	0	0	Contg	Contg

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: Work will continue under current contract vehicles.

D. Schedule Profile:

FY99 – 4th quarter – Conduct Network Evolution Demonstration.
4th quarter – Receive Next Generation Network Demonstration Plan.
4th quarter – Conduct GETS AIN Y2K Testing.
4th quarter – Evaluate Dense Wave Division Multiplexing (DWDM) Intelligent Networking.
4th quarter – Conduct Network Evolution NS/EP Analysis.
FY00 – 4th quarter – Address AIN Convergence with Data Networks.
4th quarter – Continue Next Generation Network Demonstration.
4th quarter – Develop Network Intelligence Demonstration Plan.
4th quarter – Identify AIN Emerging Carrier and Market Deployment.

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Support of the NCS/0303127K	**PROJECT NAME AND NUMBER** Advanced Intelligent Network/N091

Cost Category	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Technical Assistance	CPAF/ C	BAH McLean, VA	.906	.201	Various	0	N/A	0	1.107	1.107
Subtotal Support Costs			.906	.201		0	N/A	0	1.107	
Lucent Demonstration	Mod/ DITCO	Lucent/ Lisle, IL	.592	.188	04/00	0	N/A	0	.780	.780
Technical Reports	CPFF/ SS	Bellcore Piscataway, NJ	2.875	.851	03/00	0	N/A	0	3.726	3.726
Subtotal Product Development			3.467	1.039		0		0	4.506	
Total Cost			4.373	1.240		0		0	5.613	

Exhibit R-2a, RDT&E Project Justification			DATE: February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Support of the NCS/0303127K		**PROJECT NAME AND NUMBER** NS/EP Programs/N709

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		0	0	2.150*	2.159	2.165	2.242	2.321	Contg	Contg

A. Mission Description & Budget Item Justification

This project is required to employ newly developed processing capabilities to tailor the extensive telecommunications resources of the existing Public Switched Network (PSN), which includes the Local Exchange Carrier (LEC) and Inter Exchange Carrier (IEC) networks, thus enhancing connectivity and survivability of services for essential government users during periods of emergency. Advanced Intelligent Network (AIN) is an evolving PSN capability consisting of signaling systems, switches, computer processing, databases, and transmission media. This research will result in the utilization of these components, in a customized set of network services that, can be flexibly, rapidly, and cost effectively configured by customers upon request.

FY1999 Accomplishments:

- o Effort previously funded under Projects N092, N091, and N095.

FY2000 Plans:

- o Effort previously funded under Projects N092, N091, and N095.

FY2001 Plans:

- o Evaluate AIN capabilities and implementation for NS/EP. ($1M) (1st Qtr – 4th Qtr)
- o Assess Wireless Priority Services across cellular and satellite systems. ($400K) (1st Qtr – 4th Qtr)
- o Define, develop, demonstrate and test NS/EP enhancements. ($400K) (1st Qtr – 4th Qtr)
- o Integrate enhancements into current NCS Programs. ($100K) (1st Qtr – 4th Qtr)
- o Develop future services planning for Government Emergency Telecommunications Service (GETS) full operational capability. ($250K) (1st Qtr – 4th Qtr)
- o Total $2.150M

Exhibit R-2a, RDT&E Project Justification									DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Support of the NCS/0303127K						**PROJECT NAME AND NUMBER** NS/EP Programs/N709		
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		0	0	2.150*	2.159	2.165	2.242	2.321	Contg	Contg

B. Other Program Funding Summary: N/A

C. Acquisition Strategy: Work will continue under current contract vehicles.

D. Schedule Profile:

FY01 – 4th quarter: GETS (with NS/EP functionality) reaches full operational capability.
FY02 – 4th quarter: NS/EP integration/implementation into wireless systems.
FY03 – 4th quarter: NS/EP integration/implementation into wireless systems.
FY04 – 4th quarter: NS/EP integration/implementation into alternate access technologies.
FY05 – 4th quarter: NS/EP integration/implementation into alternate access technologies.

* This project is not a new start. It combines efforts from Project N092 (Enhanced Satellite Capability), N091 (Advanced Intelligent Network) and N095 (NS/EP Telcom. Integration Support).

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Support of the NCS/0303127K	**PROJECT NAME AND NUMBER** NS/EP Programs/N709

Cost Category	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Technical Assistance	CPAF/ C	BAH McLean, VA	0	0	N/A	1.060	Various	.250	1.310	1.310
Subtotal Support Costs			0	0		1.060		.250	1.310	
Lucent Demonstration	Mod/ DITCO	Lucent/ Lisle, IL	0	0	N/A	.545	04/01	0	.545	.545
Technical Reports	CPFF/ SS	Bellcore Piscataway, NJ	0	0	N/A	.545	03/01	.886	1.431	1.431
Subtotal Product Development			0	0		1.090		.886	1.976	
Total Cost			0	0		2.150		1.136	3.286	

Exhibit R-2, RDT&E Budget Item Justification | **DATE:** FEBRUARY 2000

APPROPRIATION/BUDGET ACTIVITY
RDT&E, Defense-Wide/07

R-1 ITEM NOMENCLATURE
Minimum Essential Emergency Communications Network/0303131K

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element (PE)		4.367	5.270	7.099	7.252	7.477	7.667	7.761	Contg	Contg
Strategic C3 Support/T70		2.382	2.654	2.773	2.807	2.911	2.972	3.036	Contg	Contg
Special Projects/T64		1.985	2.616	4.326	4.445	4.566	4.695	4.725	Contg	Contg

A. Mission Description and Budget Item Justification: This PE has two primary missions. The first focuses on ensuring the implementation of national policy requiring Nuclear Command, Control and Communications (NC3) systems. Supporting efforts assure positive control of nuclear forces and connectivity between the National Command Authorities (NCA), and strategic and theater forces. DISA also ensures that a balanced and integrated capability is maintained throughout all phases of conflict and instability. This provides informed decision-making linkage between the NCA and the Commanders-in-Chief (CINCs) of the Unified and Specified Commands. As the DOD Nuclear C3 (NC3) Systems Engineer, DISA provides direct and specialized support to ASD(C3I) and the Joint Staff (JS) and recommends support or non-support for NC3 programs as well as fail safe procedures and risk reduction actions. The second mission is performing classified work in four major areas: (1) communications planning, (2) testing and assessment, (3) interoperability engineering, and (4) development of concepts of operation and architectures. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

B. Program Change Summary

	FY99	FY00	FY01
Previous President's Budget (FY 2000)	3.052	3.799	4.023
Appropriated Value	3.061	3.799	
Adjustments to Appropriated Value	1.306	1.482	
Congressional Rescission		-.011	
Adjustments to Budget Years Since FY 00 President's Budget			3.076
Current Budget Submit/President's Budget (FY 2001)	4.367	5.270	7.099

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** Minimum Essential Emergency Communications Network/0303131K

Change Summary Explanation:

FY99 change due to below threshold reprogramming.

FY00 increase is due to a below threshold reprogramming to support a Departmental initiative.

FY01 increase is due to increased support of a Departmental initiative.

Exhibit R-2a, RDT&E Project Justification			FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K	**PROJECT NAME AND NUMBER** Strategic C3 Support/T70	

COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		2.382	2.654	2.773	2.807	2.911	2.972	3.036	Contg	Contg

A. Mission Description & Budget Item Justification: This project has three elements: Systems Analysis, Operational Assessments, and Systems Engineering. Together, these elements perform the mission of the NC3 systems engineer and NCA and Nuclear C3 support for ASD(C3I) and the Joint Staff.

The first element, Systems Analysis supports long-range planning and vulnerability assessments to ensure the NC3 system is adequate under all conditions of stress or war. This element analyzes the Nuclear Command and Control System (NCCS), i.e., strengths and weaknesses and recommends investment strategies to evolve the NCCS to achieve desired capabilities. Nuclear threats to include terrorist activities, both regional and global, are analyzed in special reports for ASD(C3I) and the Joint Staff.

The second element is Operational Assessments of fielded C3 systems and weapon platforms. These assessments are the sole means for positive verification of communications plans, procedures, operation orders, training, equipment and end-to-end system configuration. Assessments include strategic and theater, and national level C3 interfaces into the NC3 system. DISA conducts tests in an operational setting with the Joint Staff, CINCs and nuclear forces worldwide.

The third element is Systems Engineering which provides the Senior Leaders Travel Communications System with technical and management advice, planning support, systems engineering, and Test & Evaluation (T&E). Leading edge C4I technology is assessed for all communication platforms supporting Executive Travelers/Senior Leaders to include the interoperability of hardware and operational procedures. This element supports DoD and NCA aircraft, i.e., Air Force One and the National Airborne Operations Center (NAOC).

Exhibit R-2a, RDT&E Project Justification									DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K				**PROJECT NAME AND NUMBER** Strategic C3 Support/T70				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		2.382	2.654	2.773	2.807	2.911	2.972	3.036	Contg	Contg

FY 1999 Accomplishments:
- o Continued NC3 operational assessments/positive command and control, and Y2K support (1st Qtr – 4th Qtr; $1,551K)
- o Continued NC3 strategic planning, updated High Altitude Electromagnetic Pulse (HEMP) prioritization and completed assessments (1st Qtr – 4th Qtr; $385K)
- o Continued NC3 airborne engineering support, and developed airborne DII insertion plans (1st Qtr – 4th Qtr; $446K)
- o Total $2.382M

FY 2000 Plans:
- o Continue NC3 operational assessments/positive command and control.(1st Qtr – 4th Qtr; $1,301K)
- o Continue NC3 strategic planning and assessments to include National Missile Defense (NMD) and HEMP support (1st Qtr – 4th Qtr; $736K)
- o Continue systems engineering, Senior Leader Travel Communications System (SLTCS) and White House Communications Agency (WHCA) engineering support (1st Qtr – 4th Qtr; $617K)
- o Total $2.654M

FY 2001 Plans:
- o Continue NC3 operational assessments/positive command and control (1st Qtr – 4th Qtr; $1,550K)
- o Continue NC3 strategic planning and assessments to include NMD and HEMP support (1st Qtr – 4th Qtr; $518K)
- o Continue NC3 airborne engineering, SLT and WHCA engineering support (1st Qtr – 4th Qtr; $705K)
- o Total $2.773M

B. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Operations and Maintenance:	1.342	1.583	1.570	1.491	1.021	1.043	1.066

Exhibit R-2a, RDT&E Project Justification								DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K				**PROJECT NAME AND NUMBER** Strategic C3 Support/T70				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		2.382	2.654	2.773	2.807	2.911	2.972	3.036	Contg	Contg

C. Acquisition Strategy: Raytheon E-Systems, Arlington, VA; Science Applications International Corporation (SAIC), McLean, VA; Booz-Allen Hamilton, Inc.; McLean, VA.

D. Schedule Profile: Events cited below are recurring events for each fiscal year (1999–2005).

1st Qtr – Conduct Strategic Mobile Command Center Operation Order for Joint Staff (JS).
1st Qtr – Plan/Conduct Strategic and Theater Communications Assessment (Polo Hat) for JS.
1st Qtr – Conduct JS/CINC Staff Assistance Exercise (CINCSPACE, CINCSTRAT, National Airborne Operation Center).
1st Qtr – Provide ASD(C3I) NC3 Review Report.
1st Qtr – Assist in NCA and Nuclear C3 Aircraft modernization and overhaul.
2nd Qtr – Provide NC3 Systems Engineer Annual Report to ASD(C3I).
2nd Qtr – Conduct JS/CINC Staff Assistance Exercise (CINCPAC).
2nd Qtr – Plan/Conduct Strategic and Theater Communications Assessment (Polo Hat) for JS.
2nd Qtr – Provide Non-Strategic Communications Evaluation (CINCEUR).
2nd Qtr - Assist in NCA and Nuclear C3 Aircraft modernization and overhaul.
3rd Qtr – Plan/Conduct Strategic and Theater Communications Assessment (Polo Hat) for JS.
3rd Qtr – Update Emergency Communications Procedures CJCS, Emergency Action Procedures (EAP) Vol. 7 for JS.
3rd Qtr – Assist in NCA and Nuclear C3 Aircraft modernization and overhaul.
4th Qtr – Plan/Conduct Strategic and Theater Communications Assessment (Polo Hat) for JS.
4th Qtr – Update National Military Command System (NMCS)/DOD Emergency Communications Plan for JS.
4th Qtr - Assist in NCA and Nuclear C3 Aircraft modernization and overhaul.

Exhibit R-3 Cost Analysis		**DATE:** FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K	**PROJECT NAME AND NUMBER** Strategic C3 Support/T70

Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/C CPAF CPFF MIPR	Multiple Performing Activities	4.552	2.654	12/99	2.773	12/00	Contg.	Contg.	N/A

Exhibit R-2a, RDT&E Project Justification									DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07		**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K				**PROJECT NAME AND NUMBER** Special Projects/T64				
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Project Cost		1.985	2.616	4.326	4.445	4.566	4.695	4.725	Contg	Contg

A. Mission Description & Budget Item Justification: The mission is performing classified work in four major areas: (1) communications planning, (2) testing and assessment, (3) interoperability engineering, and (4) development of concepts of operation and architectures. All aspects of this project are classified and require special access. Detailed information on this project is not contained in this document but may be obtained upon request.

B. Other Program Funding Summary: N/A.

C. Acquisition Summary: Information provided upon request.

D. Schedule Profile: Information provided upon request.

Exhibit R-3 Cost Analysis		**DATE:** FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Minimum Essential Emergency Communications Network (MEECN)/0303131K	**PROJECT NAME AND NUMBER** Special Projects/T64

Support Costs

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY00 Award Date	FY 01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Total Value of Contract
Systems Engineering	SS/C CPAF CPFF MIPR	Multiple Performing Activities	1.985	2.616	06/00	4.326	06/01	Contg.	Contg.	N/A

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** C4I for the Warrior/0303149K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Total Program Element (PE)		3.407	.385	.405	.410	.427	.525	.628	Contg	Contg
Center for Standards/T20		2.954	0	0	0	0	0	0	0	2.954
C4 Interoperability Assessment/T50*		.453	.385	.405	.410	.427	.525	.628	Contg	Contg

A. Mission Description and Budget Item Justification:

This program element is the Chairman of the Joint Chiefs of Staff (CJCS) initiative promoting joint and coalition interoperability per DoD Directive 4630.5, DoD Instruction 4630.8. CJCS Instruction 6212.12 directs DISA to assess CINC, Service, and Agency C4 requirement documents (Mission Need Statements, Operational Requirement Documents, Test & Evaluation Management Plans, C4I Support Plans) for interoperability, compatibility, and integration. A recommendation is then forwarded to the Joint Staff for interoperability certification. The assessment process depends on automation to expedite, manage, and track requirement documents under review. The development of automated tools includes on-line web enabled database repository, collaborative coordination for assessors, and a suspense tracking capability. This program element is under Budget Activity 07 because it involves effort supporting operational systems development.

FY99 Accomplishments:

- Two additional software applications developed to support reviews and assessments conducted by ASD-C3I and the Joint Staff (J8) (1^{st} Qtr – 4^{th} Qtr; $349K).
- Program modifications completed to support users on both SIPRNET & NIPRNET (1^{st} Qtr – 4^{th} Qtr; $104K).
- Developed ATM Network-to-Network Interface Standards Profile (1^{st} Qtr – 4^{th} Qtr; $320K).
- Developed SHF, UHF, and EHF SATCOM Standards (1^{st} Qtr – 4^{th} Qtr; $538K).
- Technical support of SATCOM Strategic Tactical NATO Agreement (STANAG) development (1^{st} Qtr – 4^{th} Qtr; $550K).

* This project was formerly titled NMCS Subsystem Engineering.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** C4I for the Warrior/0303149K

FY 99 Accomplishments (Continued):

- Technical support to NATO Tactical Communications (TACOMS) 2000 (1st Qtr – 4th Qtr; $54K).
- Technical support to the Defense Message System (DMS) (1st Qtr – 4th Qtr; $200K).
- Technical support to the Electronic Commerce program (1st Qtr – 4th Qtr; $140K).
- Developed standards for Digitized Battlefield (1st Qtr – 4th Qtr; $575K).
- DoD technical requirements for Internet Engineering Task Force (1st Qtr – 4th Qtr; $117K).
- Combined Joint Chiefs of Staff Manuals development (1st Qtr – 4th Qtr; $460K).
- Total $3.407M

FY00 Plans:

- Install, integrate, and prototype Levels of Information System Interoperability (LISI) with Joint C4 Program Assessment Tool. (1st Qtr; $385K).
- Total $.385M

FY01 Plans:

- Continue evolving, enhancing assessment software suite to support on-line build of C4I Support Plans and Joint Requirements Oversight Council (JROC) submissions. (1st Qtr – 4th Qtr; $405K).
- Total $.405M

B. Program Change Summary:

	FY99	FY00	FY01
Previous President's Budget (FY 2000)	3.664	.388	.407
Appropriated Value	3.675	.388	
Adjustments to Appropriated Value	-.268	-.002	
Congressional Rescission		-.001	
Adjustments to Budget Year since FY 2000 President's Budget			-.002
Current Budget Submit/President's Budget (FY 2001)	3.407	.385	.405

Change Summary Explanation:

FY99 change due to undistributed congressional adjustments to Defense-wide RDT&E appropriation and below threshold reprogramming.

Exhibit R-2, RDT&E Budget Item Justification	**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**R-1 ITEM NOMENCLATURE** C4I for the Warrior/0303149K

FY00 change reflects government-wide rescission and required offset to fund higher priority initiatives.
FY01 change due to revised fiscal guidance.

C. Other Program Funding Summary:

	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Operation and Maintenance:	.483	.497	.494	.489	.485	.495	.506

D. Acquisition Strategy:
MITRE, McLean, VA

E. Schedule Profile:

FY99	4rd Qtr	C4I Support Plan Assessment Software /JROC Software Prototype
	4th Qtr	PALM Common Operational Picture (COP) Operational Evaluation
FY00	3rd Qtr	LISI Integration with Joint C4 Software Assessment Tool
FY01	4th Qtr	Interactive on-line build of C4I Support Plan
FY02 – FY05	4th Qtr	Enhancements of Joint C4 Software Assessment Tool

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Joint Spectrum Center (JSC)/0303153K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Joint Spectrum Center (JS1)		8.756	8.757	8.735	9.241	9.523	9.728	9.936	Contg	Contg

A. Mission Description and Budget Item Justification: The Joint Spectrum Center (JSC) serves as the DOD focal point for electromagnetic (EM) spectrum management matters in support of the Unified Commands, Joint Staff, Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASD (C^3I)), Military Departments, and Defense Agencies in planning, acquisition, training, and operations. The JSC reports operationally to Defense Information Systems Agency (DISA). The JSC is the responsible activity for DOD spectrum management and use automation for strategic, theater, and tactical operations. The JSC has the responsibility for architecture and standardization of DOD automated spectrum information and management systems. Specifically, the Center designs, develops, and maintains DOD automated spectrum management systems, evaluation tools, and databases employed by the Unified Commands, Military Departments, and Defense Agencies. The JSC databases are the prime sources of information for DOD use of the EM spectrum. The JSC provides guidance and assistance to Office of Assistant Secretary of Defense (OASD) C^3I, Joint Staff, DOD activities and Unified Commands to ensure development and acquisition of electromagnetically compatible systems and for the effective deployment of these systems in military operations. This Center is the focal point for spectrum related support, Electromagnetic Environmental Effects (E^3), and EM interference resolution assistance to operational units including deployable support to CINC Joint Task Forces. The JSC mission is integral to other vital activities such as Information Operations (IO), Command and Control (C2) Protect and other defensive C3 warfare activities as directed by the Joint Staff. This program element is under Budget Activity 07 because it supports operational systems development.

FY 1999 Accomplishments:

- Provided Spectrum Technical/Analytical Support to OASD(C^3I)/Joint Staff/ Office of Spectrum Analysis and Management(OSAM) (1^{st} Qtr – 4^{th} Qtr $1.721M)
- Provided Spectrum Management Information Systems Support to include release of initial version SPECTRUM XXI (1^{st} Qtr – 4^{th} Qtr $4.124M)
- Provided Support for Development of E3 Program (1^{st} Qtr – 4^{th} Qtr $2.911M)
- Total $8.756M

Exhibit R-1, RDT&E Programs

DEFENSE SECURITY SERVICE

Appropriation: 97 0400.49 **Date: February 2000**

R-1 Line Item No	Program Element Number	Item	Budget Activity	TOA, $ in Millions Past Year Cost	Current Year Cost	Budget Year 1 Cost	Budget Year 2 Cost
142	0305127V	National Foreign Intelligence Program (NFIP)	07	.416	.436	.444	.464

Exhibit R-1C, RDT&E Programs – Comparison Report

DEFENSE SECURITY SERVICE

Appropriation: 97 0400.49 **Date: February 2000**

					TOA, $ in Millions			
Budget Submission	R-1 Line Item No	Program Element Number	Item	Budget Activity	Past Year Cost	Current Year Cost	Budget Year 1 Cost	Budget Year 2 Cost
FY2000 PB	142	0305127V	NFIP	07	.418	.437	.442	.462
FY2001 PB	142	0305127V	NFIP	07	.416	.436	.444	.464
DELTA	142	0305127V	NFIP	07	(.002)	(.001)	.002	.002

Exhibit R-2, RDT&E Budget Item Justification							Date: February 2000
APPROPRIATION/BUDGET ACTIVITY 97 0400 4900/07			R-1 ITEM NOMENCLATURE National Foreign Intelligence Program 0305127V				
COST (in Millions)	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	Total Cost
Small and Miscellaneous Grant	0.416	0.436	0.444	0.464	0.474	0.483	0.494	3.211

A. Mission Description and Budget Item Justification

The RDT&E funds contained in the DSS budget are administered by the Department of Defense Polygraph Institute (DoDPI). These funds provide grants for master's and doctoral degree students and funding to academic and private institutions research in forensic psychophysiology. Additionally, funds provide for external contracts for projects that are incorporated in the Institute's prioritized research plan. This plan was developed at the request of the Security Policy Board. The research program has three Congressionally mandated research areas: (1) evaluate the validity of polygraph techniques, (2) conduct research on polygraph countermeasures, and (3) conduct developmental research to improve polygraph technology. Research falls into four major categories: (1) computerization of polygraph test results, (2) new physiological measures and equipment, (3) new test formats and procedures, and (4) miscellaneous grants to construct a computerized data base that contains studies and statistics on polygraph studies.

B. Program Change Summary

	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	Total Cost
FY2000 President’s Budget	0.418	0.437	0.442	0.462	0.472	0.482	0.493	3.206
General Reduction	(0.001)							(0.001)
Inflation	(0.001)							(0.001)
Government-wide Rescission		(0.001)						(0.001)
General Increase			0.002	0.002	0.002	0.001	0.001	0.008
FY2001 President’s Budget	0.416	0.436	0.444	0.464	0.474	0.483	0.494	3.211

C. Other Program Funding Summary

The Operation and Maintenance, Defense-wide appropriation is charged for the salaries and support costs for seven polygraph positions; and beginning in FY 1999 for one instructor focusing on FCI initiatives and one quality assurance inspector focusing on FCI polygraph standardization issues (9 positions).

FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005
0.800	0.900	0.900	0.900	0.900	1.000	1.000

D. Acquisition Strategy: N/A

E. Schedule Profile: There are no scheduled acquisition, program, T&E, or contract milestones.

Exhibit R-2, RDT&E Budget Item Justification								**DATE:** February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Joint Spectrum Center (JSC)/0303153K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Joint Spectrum Center (JS1)		8.756	8.757	8.735	9.241	9.523	9.728	9.936	Contg	Contg

FY 2000 Plans:

- Spectrum Technical/Analytical Support to OASD(C^3I)/Joint Staff/OSAM (1st Qtr – 4th Qtr; $1.630M)
- Spectrum Management Information Systems (1st Qtr – 4th Qtr; $3.860M)
- E3 Program Development (1st Qtr – 4th Qtr; $3.267M)
- Total $8.757M

FY 2001 Plans:

- Continue Spectrum Technical/Analytical Support to OASD(C^3I)/Joint Staff/OSAM (1st Qtr – 4th Qtr; $1.480M)
- Continue Spectrum Management Information Systems (1st Qtr – 4th Qtr; $3.975M)
- Continue E3 Program Development (1st Qtr – 4th Qtr; $3.280M)
- Total $8.735M

B. Program Change Summary:

	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000)	8.813	8.823	8.884
Appropriated Value	8.839	8.823	
Adjustments to Appropriated Value	-.083	-.041	
Congressional Rescission		-.025	
Adjustments to Budget Year Since FY 2000 President's Budget			-.149
Current Budget Submit/President's Budget (FY 2001)	8.756	8.757	8.735

Change Summary Explanation:

FY99 decrease due to Congressional adjustments to the Defense-wide RDT&E appropriation and below threshold reprogramming.

FY00 decrease due to Government-wide rescission and other below threshold reprogramming.

FY01 decrease due to revised fiscal guidance.

Exhibit R-2, RDT&E Budget Item Justification								DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07					**R-1 ITEM NOMENCLATURE** Joint Spectrum Center (JSC)/0303153K					
COST (in millions)		FY99	FY00	FY01	FY02	FY03	FY04	FY05	Cost to Complete	Total Cost
Joint Spectrum Center (JS1)		8.756	8.757	8.735	9.241	9.523	9.728	9.936	Contg	Contg

C. Other Program Funding Summary:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete
O&M	14.191	14.081	13.619	13.775	14.114	14.435	14.764	Contg

D. Acquisition Strategy: Engineering support services for the JSC are provided by contract. No in-house government capability exists nor is it practical to develop one that can provide the expertise necessary to fulfill the mission and responsibilities of the JSC. The period of the current cost plus award fee contract ends 30 September 2000. Full and open competition will be used for acquisition of follow-on contract(s).

E. Schedule Profile:

	FY 1999				FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Exercised Yr 2 Option		X																										
Commerce Business Notice New Contract(s)					X																							
Contract Award(s)						X																						
Contract Performance Begins									X																			

Exhibit R-3 Cost Analysis		**DATE:** February 2000
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07	**PROGRAM ELEMENT** Joint Spectrum Center/0303153K	**PROJECT NAME AND NUMBER** Joint Spectrum Center/JS1

Cost Category	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering/TechnicalSpt	C/CPAF	IIT Research Inst Annapolis, MD	6.737	6.794	10/99				13.531	13.531
GFE	C/CPAF	IIT Research Inst Annapolis, MD	.400	.400					.800	.800
Contractor Engineering/TechnicalSpt	C/CPFF	Various	1.619	1.563	10/99				3.182	3.182
Contractor Engineering/TechnicalSpt	TBD	TBD				8.735	TBD	TBD	TBD	TBD
Subtotal Test & Evaluation			8.756	8.757		8.735				
Total			8.756	8.757		8.735		Contg	Contg	Contg

Remarks: Contract for effort beyond FY 00 to be determined (TBD)PY's effort preceding FY99 primarily funded under Air Force PE 0303144F and under funds managed by Navy.

PROGRAM ELEMENT COMPARISON SUMMARY
INTRODUCTION AND EXPLANATION OF CONTENTS

General Information.

This document provides summary information on the Defense Logistics Agency(DLA) Research, Development, Test and Evaluation Program. This information is specifically prepared for the Office of the Under Secretary of Defense (Comptroller), in support of the OSD/OMB budget review, and congressional committees during the FY 2001 budget hearings.

Comparison of FY 1999 and FY 2000 Data.

This submission reflects an increase of $1.220 million in FY 1999 and a net increase of $64.510 million in FY 2000 from last year's Congressional Justification Budget Submission. FY 1999 increased due to congressional adds for the Gulf Coast Maritime Center, a program that transferred from the Defense Advanced Research Projects Agency (DARPA) to DLA under the Logistics R&D program, less inflation, and a transfer of funds from the Defense Technology Analysis Office (DTAO) organization to the Department. FY 2000 funding more than doubled over last year's submission due to congressional increases for the Commodity Management Systems Consolidation, Computer Aided Technology Transfer(CATT), Microelectronics (DMEA), Competitive Sustainment,and Aging Aircraft Sustainment Technology programs; and realignment of Information Technology (IT)development funding (beginning in FY 2000) from the O&M appropriation to the RDT&E appropriation.

FY 2001 Budget Structure to FY 2000 Budget.

Beginning in FY 2000, the Defense Technology Integration program under BA 6 is reduced by approximately $200 thousand per fiscal year, transferring these dollars to OSD to provide O&M funds in support of Intergovernmental Personnel Act (IPA) personnel. Also, FY 2000 includes internal Agency reprogramming of funds between the Log R&D program and Industrial Preparedness/Manufacturing Technology program to provide $4.506 million for the Rapid Acquisition of Manufactured Parts (RAMP) program in its transition to self-sufficiency during FY 2000. Also, three new IT Development PEs are established for the Standard Procurement System (SPS)(PE# 0605015S), Other Defense Contract Management Command (DCMC) Initiatives (PE# 0605013S), and DoD Human Resources Activity(DHRA)administered DoD Integrated Military Human Resource System (DIMHRS)/Smart Card programs(PE# 0605014S), under BA 5. The increase in FY(s) 2000 and/or 2001 is also due to total obligational authority (TOA) distribution of re-scoped/new R&D projects and include(s) new starts for the

FY 2001 Budget Structure to FY 2000 Budget (Continued)

Intelligent Demand Manager, Computer-to-Computer Negotiations, Pay per Use Logistics Systems, Aging Aircraft Sustainment Technology, and Virtual Medical Assembly projects funded under the Logistics R&D program against PE 0603712S under BA 3; and one new start for the Forging Lead Time Technology (FLTT) project funded under the Industrial Preparedness/Manufacturing Technology program funded against PE 0708011S under BA 7.

DEFENSE LOGISTICS AGENCY
RESEARCH AND DEVELOPMENT PROGRAM
FY 2001 BUDGET ESTIMATES
FEBRUARY 2000

Table of Contents

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE

FY 2001 PROGRAM ELEMENT SUMMARY (R-1)

(Dollars in Thousands)

Program Element Number	Title	Budget Activity	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
0603712S	Logistics R&D Technology Demonstration	03	25,651	22,920	23,082
0603805S	National Center for Manufacturing Sciences	03	5,938	0	0
0605013S	Info Technology Development-Other (DCMC Initiatives)	05	0	0	1,671
0605014S	Info Technology Development -DHRA (DIMHRS/Smart Card)	05	0	47,499	26,797
0605015S	Info Technology Development (SPS)	05	0	0	15,772
0605798S	Defense Technology Analysis	06	7,741	9,775	5,048
0605803S	DoD Human Resources Activity	06	8,090	8,080	8,776
0708011S	Industrial Preparedness/ Manufacturing Technology	07	25,843	13,472	7,090
	TOTAL - DIRECT		73,263	101,746	88,236

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE: FEBRUARY 2000							
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3		Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATION							
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
TOTAL PROGRAM ELEMENT	25.651	22.920	23.082	23.399	24.610	26.270	27.644	Cont	Cont
#1: User-Source Link	3.859	2.789	0.000	0.000	0.000	0.000	0.000	0.000	6.648
#2: Rule-based Decisions	2.276	1.556	0.000	0.000	0.000	0.000	0.000	0.000	3.832
#3: Material Acquisition: Electronics	4.948	5.130	9.957	10.147	10.337	10.317	10.273	Cont	Cont
#4: Advanced Logistics Support	3.760	2.044	1.596	0.000	0.000	0.000	0.000	0.000	7.400
#5: Advanced Technology Integrator	1.842	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.842
#6: Intelligent Demand Manager	0.000	0.953	1.733	1.979	2.135	2.179	2.216	Cont	Cont
#7: Computer to Computer Negotiations	0.000	0.000	2.326	2.987	3.250	3.132	2.225	Cont	Cont
#8: Pay Per Use Logistics System	0.000	0.000	1.456	2.374	2.402	2.477	1.946	Cont	Cont
#9: Aging Aircraft Sustainment Technology	0.000	0.000	4.051	4.131	4.481	5.164	5.408	Cont	Cont
#10: Virtual Reality Medical Assembly	0.000	0.000	1.963	1.781	2.005	2.039	2.077	Cont	Cont
#11: Future Logistics R&D Requirements	0.000	0.000	0.000	0.000	0.000	0.962	3.499	Cont	Cont
#12: On Demand Manufacturing/CATT	7.036	6.523	0.000	0.000	0.000	0.000	0.000	0.000	13.381
#13: Gulf Coast Maritime Center	1.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.930
#14: Competitive Sustainment	0.000	0.982	0.000	0.000	0.000	0.000	0.000	0.000	0.982
#15: Defense Microelectronics Activities	0.000	2.943	0.000	0.000	0.000	0.000	0.000	0.000	2.943

A. Mission Description & Budget Item Justification: The DoD logistics vision calls for providing flexible, cost effective and prompt materiel support, logistics information and services, achieving the leanest possible infrastructure and the employment of the best commercial and government sources and practices. The DLA Logistics R&D program will develop and demonstrate high risk, high payoff technology that will provide a significantly higher level of support at lower costs, than would be otherwise attainable. The DLA program is a key part of the DARPA/DLA Advanced Logistics Program. Focused Logistics is one of the five basic tenants of Joint Vision 2010. The DLA logistics R&D program contributes directly to achieving JV 2010's vision of logistics "support in hours or days versus weeks." The objective of the Advanced Logistics Program is a collaborative environment which will allow the Operations community (J3) and Logistics planning community (J4), TRANSCOM, and DLA to seamlessly interact on operations planning and execution of wartime operations. In addition, DLA will use the same system in peacetime to significantly reduce Logistics Response Time and reduce the cost of DLA operations while maintaining readiness.

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY:	Program Element:
RTD&E, Defense-Wide/Budget Activity 3	0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATION

#1 USER-SOURCE LINK: Effort links DoD parts consumers with suppliers, enabling users to decide on price, quality, packaging, quantity, and ordering. Effort will significantly reduce DLA's overhead and inventory costs as more direct vendor deliveries will be attainable. The program provided the technical infrastructure for the DoD EMALL.

#2 RULE-BASED DECISIONS: Automates decision processes in buying, cataloging and item management that are strictly rule-based, to increase turnarounds and decreasing labor costs. First thrust concentrates on procurement activities, followed by item management and cataloging functions.

#3 MATERIAL ACQUISITIONS: ELECTRONICS: Will fund continued enhancement of Generalized Emulation of Microcircuits effort and continue the Advanced Microcircuit Emulation (AME) which started in FY 97. Program reduces weapons system support costs by providing an alternative to circuit board redesigns and lifetime buys. To date, GEM has delivered 14,000 microcircuits of 140 different types to 31 different weapon systems.

#4 ADVANCED TECHNOLOGY LOGISTICS SUPPORT NETWORK (ATSN): Effort develops a total logistics approach to applying advanced decision supports to center's goals well into the next century. Emphasis on cost-effective resourcing for wartime needs, customer choices, and fast, predictable deliveries.

#5 ADVANCED TECHNOLOGY INTEGRATOR: Will demonstrate prototypes of new material handling and distribution equipment in DoD depots prior to full scale implementation. Targets are storage, distribution and receiving processes, incorporating automatic identification technologies.

#6 INTELLIGENT DEMAND MANAGER: Will demonstrate improved wholesale supply availability that can be attained from real time tracking of spares consumption at the lowest level of the supply system by developing advanced data mining and data visualization technologies.

#7 COMPUTER TO COMPUTER NEGOTIATIONS: Will reduce the time to negotiate, award, and modify contracts, to enable DLA and its suppliers to respond rapidly to changes in supply and demand in peace and war by allowing machines to reconcile selected differences between the government and suppliers.

#8 PAY PER USE LOGISTICS SYSTEM: Will develop flexible, cost effective alternatives to software development that overcome the delays and expense associated with traditional logistics systems development.

#9 AGING AIRCRAFT SUSTAINMENT TECHNOLOGY: Aging systems take progressively more time and money to maintain. This program develops, tests and transfers cost effective logistics support technologies on such systems as B-52, KC-135, and C-130 and other aircraft and related systems that remain in use well beyond their design life.

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: SEPTEMBER 1999
APPROPRIATION/BUDGET ACTIVITY:	Program Element:
RTD&E, Defense-Wide/Budget Activity 3	0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATION

#10 VIRTUAL MEDICAL ASSEMBLY: Lower costs in assembly process, by allowing users to accurately visualize form, fit, function and utility before investing large sums of money to procure the assemblies.

#11 FUTURE LOGISTICS R&D REQUIREMENTS: These funds will accelerate the transition of technology to the DLA, so that dramatic improvements in supply support can be undertaken. The alternative is for the Agency to slowly follow in the footsteps of Commercial supply practices, rather than to be the leader in Logistics effectiveness and military readiness.

#12 ON DEMAND MANUFACTURING/CATT: This program has established a network of suppliers and technology for long lead time, difficult to procure, weapons systems spares. FY 00 is the final year of the program.

#13 GULF COAST MARITIME CENTER: Develop simulations based design systems.

#14 COMPETITIVE SUSTAINMENT: This was added by Congress in recognition of the need to substantially reduce the cost of support for aging weapon systems.

#15 DEFENSE MICROELECTRONICS ACTIVITY: Addresses DoD microelectronics problems by redesigning or re-engineering printed wiring assemblies and higher level electronics subsystems.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission:	23.718	17.336	19.676
Adjustment to Appropriated Value:	+1.933	+5.916	+3.406
Congressional Rescission:		- .332	
Current Budget Submission:	25.651	22.920	23.082

Change Summary Explanation: FY 99 net adjustment reflects an internal realignment from DARPA to DLA for Gulf Coast Maritime Center ($1.930 million) and -$175 thousand in congressional undistributed reductions. FY 00 reflects congressional adds -- +$6 million for CATT; +$3 million for the Defense Microelectronics Activity; +$1 million for competitive sustainment; and (-$332 thousand) for government-wide rescission and (-$127 thousand) for inflation adjustments. FY 00 also reflects a below threshold (B/T) reprogramming of funds (-$3.956 million) from five LOG R&D projects to provide FY 00 funding for the Rapid Acquisition of Manufactured Parts (RAMP) program funded under the IP/ManTech program, PE #07080115. FY 01 reflects re-scoped (project emphasis with increased funding (+$4 million) for the Material Acquisition Electronics project and (-$131 thousand) for inflation adjustments.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)		DATE: FEBRUARY 2000							
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3		Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON							
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#1: USER-SOURCE LINK	3.859	2.789	0.000	0.000	0.000	0.000	0.000	0.000	6.648

A. Mission Description and Justification

User-Source Link will dramatically change the current logistical system as it exists today. DLA will offer users choices on sourcing, packaging, quality levels and shipping that were previously decided by our Inventory Control Points. The user will also be able to place the order on a pre-negotiated price schedule established by DLA. This will be accomplished by linking the user of parts with the suppliers. The initial phase will involve linking users to suppliers through a set of query servers. This will eliminate the need for suppliers to continually provide product information updates to the Government. Instead, the query servers will go to the suppliers organic product databases and retrieve the information for the user. The final phase of this effort will involve the use of "Agents." Software agents will travel between suppliers catalogs retrieving the information requested by the user without the use of query servers.

This project is needed to provide the DoD's customers with the information they need to make an informed buying decision. It will enable DLA to significantly reduce its overhead costs which are ultimately passed on to our customers. More direct vendor deliveries will result from this link which will reduce inventories. The use of suppliers part data will reduce the need for establishing NSNs and other cataloging data. Post-acquisition support problems and the resources necessary to solve them will go down as the users can interactively make their specific requirements known.

(U) Program Accomplishments and Plans:
(U) FY 1999:
Demonstrated capability to use XML business transactions.
(U) FY 2000:
Final development capability using highly distributed catalogs for EMALL and mechanical requisitions received in bulk from customers.
(U) FY 2001: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#1: USER-SOURCE LINK	3.859	2.789	0.000	0.000	0.000	0.000	0.000	0.000	6.648

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	3.888	3.848	0.000
Adjustment to Appropriated Value	-.029	-1.059	-----
Current Budget Submission	3.859	2.789	0.000

Change Summary Explanation: N/A

C. Other Program Funding Summary:
No funding dependencies on other programs.
Related programs: DARPA's Fast program (PE #62301E); DARPA's Advanced Logistics program P.E.

D. Schedule Profile:
US LINK will test links among DLA Inventory Control Points and Navy/Army/AF customer sites, and private industry.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
			N/A
Phase II: Agent Development Solicitation & Award	X	X	
Phase II: Agent Beta Testing	XXX		
Phase II: XML Demonstrations	XX		
Phase II: Deploy final fully distributed capability		XXXX	

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#2: AUTOMATE RULE-BASED DECISIONS	2.276	1.556	0.000	0.000	0.000	0.000	0.000	0.000	3.832

A. Mission Description and Justification

The system being developed under the Automated Rule Based Decision thrust is called DELTA. The DELTA system shall improve DLA's business practices by enabling the DLA to move away from its current business practice of procuring items one requisition at a time (usually as the DLA customers' needs arise). This will be accomplished by:

1. Creation, maintenance, and utilization of an electronic portfolio of best EDI/EC business practices and their related long-term arrangements with suppliers.
2. Enabling the negotiating long-term flexible business arrangements ahead of time with leading industry suppliers and third party supply chain management logistician.
4. Allowing customers to execute purchasing actions interactively against these arrangements.
5. Electronically executing purchasing actions against such arrangements, without human interaction, based on electronically stored source selection rules about customer preferences.
6. Utilizing cutting edge technology (including: knowledge acquisition; expert systems; case based reasoning; natural language processing; CORBA information agents, mediators and sentinels) to accomplish the above.

(U) Program Accomplishments and Plans:
(U) FY 1999:
Demonstrated a leave in place prototype that processes bulk requirements that are mechanically generated by the Service supply systems against government owned inventory and commercially available inventory.
Demonstrated a near-English interface that allows non-technical personnel to establish the business rules for automatically selecting the best from multiple sources of supply.
(U) FY 2000:
Integration of best of commercial practices in Supply Chain Management into the DLA operational business processes via intelligent agent based workflow generation.
(U) FY 2001: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#2: AUTOMATE RULE-BASED DECISIONS	2.276	1.556	0.000	0.000	0.000	0.000	0.000	0.000	3.832

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	2.293	2.089	0.000
Adjustment to Appropriated Value	-.017	-.533	-----
Current Budget Submission	2.276	1.556	0.000

Change Summary Explanation: N/A

C. Other Program Funding Summary:
No funding dependencies on other programs.
Related programs: DARPA's Intelligent Integration of Information (I-3) program (PE #62301E) Knowledge Sharing Initiative. DARPA's Advanced Logistics Program (ALP).

D. Schedule Profile:

	FY 99	FY 00	FY 01
QUARTERS	1234	1234	1234
Bulk Requirements processing (government sources)	XXXX		
Component development and formal process representation of Best Commercial Practices	XXXX		
Testing and development of Best Commercial Practices		XXX	
Prototype delivery of automated processes via workflow generation			X

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#3: MATERIAL ACQUISITION: ELECTRONICS	4.948	5.130	9.957	10.147	10.337	10.317	10.273	Cont	Cont

A. Mission Description and Justification

Develop a capability to emulate most obsolete digital integrated circuits (ICs) in the federal catalog using a single, flexible manufacturing line. DoD has estimated that $2.9B is spent every five years in redesigning circuit card assemblies. Much of these redesigns are driven by IC obsolescence. The commercial suppliers of ICs typically terminate production lines every 18 months, moving on to the next generation of ICs. Because DoD maintains weapons systems much longer than 18 months, this creates an obsolescence problem that can only be overcome through buying excessive inventories of parts before the production lines close or redesigning the next higher assembly to eliminate the obsolete part. DLA, as the manager of over 80% of the IC supply class, must have a capability to manufacture these devices. This project develops this capability and expands it to succeeding generations of obsolete ICs through the Advanced Microcircuit Emulation program.

(U) Program Achievements and Plans:

(U) FY 1999:
Development and demonstration of microcircuits supplied to numerous systems, including: F-15, F-16, Multiple Launch Rocket System, UYK-44, joint Surveillance Target Attack Radar System, Phalanx, distributors, and DSCC (various systems). Successfully developed and demonstrated ASIC characterization and emulation process. Initiated cooperative ASIC emulation with F-15 and Boeing. Became Boeing Preferred Supplier. Demonstrated mixed signal emulation. Next generation emulation array (100K) designed and under fabrication. High Voltage process and emulation part demonstrated. Microprocessor emulation array conceptualized. Developing new process and arrays for high speed, LSI, and VLSI.
(U) FY 2000:
Demonstrate 100K ASIC with emulation array. Demonstrate advanced high-speed process. Continual cost reduction for ASIC emulation.
(U) FY 2001:
Demonstrate 200K ASIC emulation array. Demonstrate configurable microprocessor array. Continual cost reduction for ASIC emulation.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#3: MATERIAL ACQUISITION: ELECTRONICS	4.948	5.130	9.957	10.147	10.337	10.317	10.273	Cont	Cont

B. Program Change Summary:

COST IN MILLIONS

	FY 99	FY 00	FY 01
President’s Budget Submission	4.985	5.229	6.013
Adjustment to Appropriated Value	-.037	-.099	+3.944
Current Budget Submission	4.948	5.130	9.957

Change Summary Explanation: FY 01 reflects agency program adjustments. FY 01 and out-years reflect a resource adjustment to compensate for the semiconductor industry’s more rapid technology progression. The Semiconductor Industry Association’s Roadmap was used for definition of the program requirements. There has been an eight year industry acceleration of microcircuit technology (actual vs. roadmap) from the time when the Advanced Microcircuit Emulation Program was planned. The increased resources allow emulation technology to keep pace with the more rapid technology obsolescence of today's marketplace. The resulting emulation ability will support DSCC and the weapon systems for microcircuits that are not otherwise procurable. Both the percentage of PRs filled and Weapon System readiness levels will increase.

C. Other Program Funding Summary: No funding dependencies on other programs. No related programs.

D. Schedule Profile: The AME Program will eliminate the need to redesign in many cases by producing a form, fit, and function “drop-in” replacement for the old microcircuits using current technology. The Generalized Emulation of Microcircuit (GEM) Production Program addresses the microcircuits built in the 1960s-1970s. The AME Program addresses the 1980s and early 1990s devices.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Mixed Signal Emulation Demonstration	X		
ASIC Characterization process Demonstration	X		
High Voltage Emulation Demonstration	X		
100K Emulation Array Demonstration		X	
Advanced High Speed Process Demonstration		X	
Configurable Microprocessor Array Demonstration			X
200K Emulation Array Demonstration			X
Advanced Emulation Process Demonstration			X
Cost Reduction for ASIC Emulation	XXXX	XXXX	XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#4: ADVANCED TECHNOLOGY LOGISTICS SUPPORT NETWORK	3.760	2.044	1.596	0.000	0.000	0.000	0.000	0.000	7.400

A. Mission Description and Justification

Advanced Technology Logistics Support Network initiative is designed to assure the warfighter that readiness is achievable with increasing reliance on commercial inventories and continued government inventory drawdown. It's focus is to demonstrate a readiness decision support system prototype that can assist logisticians in assessing our capability to support peace and wartime requirements. It will develop and utilize direct electronic access to commercial and government asset positions and commercial and government demand history and usage projections. Algorithms will be developed to predict the state of readiness achievable for peacetime or contingency plans, given commercial and government assets and commercial and government usage history and projections. Feedback mechanisms will be developed for contingency re-planning. Feedback mechanisms will also be developed to communicate revised readiness models which will aid in stock level decisions and changes to contractual arrangements with commercial sources to address shortfalls in the state of readiness.

The ATSN program has far reaching applicability in allowing DLA and its customers to fully capitalize on the many emerging logistics related information technology advancements. The program will bring this advanced technology to both peacetime customer support and mobilization support. These new technologies are critical elements to the achievement of DLA's programmed out-year savings in conjunction with implementation of reengineering initiatives and acquisition reform.

(U) Program Accomplishments and Plans:
(U) FY 1999: Established operational prototype model for readiness decision support system for industrial inventories. Developed the capability to estimate commercial capability to support emergency needs for medical pharmaceutical items.
(U) FY 2000: Develop production model for readiness decision support. Develop the capability to estimate commercial capability to support emergency needs for all medical pharmaceutical surgical, and equipment items. Expand coverage and readiness models to other commodities. Develop concept of operations, requirements specification for subsistence and industrial commodities.
(U) FY 2001: Develop operational and production prototype readiness decision support models for Subsistence and industrial commodities. Expand coverage of readiness model to clothing and textile commodity. Develop concept of operations and requirements specification.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#4: ADVANCED TECHNOLOGY LOGISTICS SUPPORT NETWORK	3.760	2.044	1.596	0.000	0.000	0.000	0.000	0.000	7.400

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	3.789	3.848	1.836
Adjustment to Appropriated Value	-.029	-1.804	-.240
Current Budget Submission	3.760	2.044	1.596

Change Summary Explanation: FY 01 net adjustment reflects agency below threshold program adjustments to accommodate higher priority R&D requirements.

C. Other Program Funding Summary:
No funding dependencies on other programs.
DARPA's FAST program (PE #62301E); DARPA's Intelligent Integration of Information (I-3) (PE #62301E) program.

D. Schedule Profile: DLA's Defense Personnel Supply Center (DPSC) will manage the ATSN program and will implement communications network developed under US Link. Objectives include reduction in customer delivery time variances from 50% to 3%, reduced inventories (both retail & wholesale), on-line requisition status, and lower unit prices.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Operational prototype model	XXXX		
Production model integration – Medical		XXX	
Additional commodities – Subsistence & Industrial, Clothing		XXX	XXXX
Integration with GCCS		XXXX	XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#5: ADVANCED TECHNOLOGY INTEGRATOR	1.842	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.842

A. Mission Description and Justification:

The DoD has pursued material handling and distribution technologies in the past by identifying promising commercial technologies and installing them in our depots, many times in the absence of quantifiable benefits. This has resulted in identified challenges concerning realistic benefits, system interoperability, and resource/personnel capability. The Advanced Technology Integrator will eliminate these problems by providing a "try before you fly" capability where equipment can be simulated in a live depot environment prior to full-scale implementation. A demonstration center would be created. Tasks would be executed by the center in order to fully evaluate promising technologies or new concepts.

The impact of the Advanced Technology Integrator would be lower depot overhead costs associated with the receiving, storage, and issuing processes.

(U) Program Achievements and Plans:
(U) FY 1999:
Begin data mining activity for advanced supply centers and depot operations.
(U) FY 2000: N/A
(U) FY 2001: N/A

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	1.855	0.000	0.000
Adjustment to Appropriated Value	-.013	-----	-----
Current Budget Submission	1.842	0.000	0.000

Change Summary Explanation: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#5: ADVANCED TECHNOLOGY INTEGRATOR	1.842	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.842

C. Other Program Funding Summary: No funding dependencies on other programs.

D. Schedule Profile: The Advanced Technology Integrator (ATI) is an innovative concept designed to identify gaps in commercial technology prior to acquisition and full scale implementation. ATI will foster the advancement of material handling and automatic identification technologies that will benefit the DLA/DoD distribution community.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
EMALL kitting	XX		

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#6: INTELLIGENT DEMAND MANAGER	0.000	0.953	1.733	1.979	2.135	2.179	2.216	Cont	Cont

A. Mission Description and Justification

The use of artificial intelligence for managing items has been explored in the past, but changes in information technology environment and data availability could significantly increase the potential to better manage items and anticipate demands from customers. This will most likely have a significant benefit for the management of Numerical Stock Objective items.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000:
Analysis tools--Starlight and Data Mining--how can we exploit these technologies to identify relationships that can be used to more accurately project demand--especially on new systems entering the inventory or on proven systems where unforecasted demand may occur due to aging weapon systems. This will require the use of simulation models such as PARIS to evaluate alternate scenarios, cost trade-offs, and inventory management policy decisions.
(U) FY 2001:
Distribution resource planning will exploit total asset visibility to make inventory a scheduling problem for replenishment type items. It will be used in commercial applications for high volume/recurring demand items. It anticipates and takes proactive action before demands actually occur.
Assessment--joint action with the Services to use their multi-echelon, multi-indenture models to project consumable requirements, develop availability curves, determine funding requirements, and project wartime/peacetime demands. Information could "feed" ICIS instead of DLA attempting to develop its own set of models.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	0.000	1.424	1.975
Adjustment to Appropriated Value		-0.471	-.242
Current Budget Submission	0.000	0.953	1.733

Change Summary Explanation: New project in FY 00. FY 01 net adjustment reflects agency below threshold program adjustments to accommodate higher priority R&D requirements.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#6: INTELLIGENT DEMAND MANAGER	0.000	0.953	1.733	1.979	2.135	2.179	2.216	Cont	Cont

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Formulate the BAA announcement	XX		
Open the BAA	XX		
Awards for concept studies		X	
Awards for prototype development		XXX	
Prototype development		XXXX	XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#7: COMPUTER TO COMPUTER NEGOTIATIONS	0.000	0.000	2.326	2.987	3.250	3.132	2.225	Cont	Cont

A. Mission Description and Justification

Long lead-times for establishing long-term logistics support contracts do not allow DLA business managers to react to rapidly changing requirements in supply change management. The purpose of this project is to use knowledge base, rule base, and intelligent work flow technologies to enable computers to duplicate the decision making process of humans when negotiating and executing contracts. This will reduce the lead-time required to establish these contracts and contribute to a paperless environment.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000: N/A
(U) FY 2001: Phase I initial identification areas for application/integration of knowledge base, rule base, and intelligent work flow technologies.

B. Program Change Summary:

	FY 99	FY 00	FY 01
President's Budget Submission	0.000	0.000	2.339
Adjustment to Appropriated Value	-----	-----	-0.013
Current Budget Submission	0.000	0.000	2.326

Change Summary Explanation: N/A

C. Other Program Funding Summary: No funding dependencies.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#7: COMPUTER TO COMPUTER NEGOTIATIONS	0.000	0.000	2.326	2.987	3.250	3.132	2.225	Cont	Cont

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Formulate the BAA announcement		XX	
Open the BAA		XX	
Awards for concept studies			X
Awards for prototype development			XXX
Prototype Development			XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#8: PAY PER USE LOGISTICS SYSTEM	0.000	0.000	1.456	2.374	2.402	2.477	1.946	Cont	Cont

A. Mission Description and Justification

Current DoD computer systems are large, inflexible, difficult to maintain and seemingly impossible to keep current with emerging technology. For example, the supply system still uses 80 card column transaction sets based on 40 year old technology. One cause of this stagnation is that these systems are monolithic programs that have evolved over time to meet changing needs. Modernization of these systems has been hindered by the high cost to modernize and the fact that much of the functionality is not well documented or understood.

Emergence of network computing holds the promise of providing the flexibility and modularity needed to incrementally modernize DoD logistics systems and simultaneously provide an opportunity for a radical change in the way computer operations are financed. The Pay Per Use program objective is to demonstrate the costs and flexibility advantages of large scale, highly distributed networks in addressing not only the technical problem associated with logistics systems modernization, but also the cost advantages of designing a system based on the concept of “Pay Per Use”. Pay Per Use means that the functional organization using a computer system pays a fixed rate only for actual use of the system. This approach is analogous to the emerging acquisition strategy of “power by the hour”, where the Air Force, rather than buying and owning jet engines are paying a set rate per hour for engine use. Similarly, Pay Per Use program users would only be charged for the time that the functional application was actually being used. Ideally, the end user would have choice among different COTS vendors for the same application.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000: N/A
(U) FY 2001: Initial awards will be made for concept studies. The concepts will be evaluated and prototypes will begin to be developed.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#8: PAY PER USE LOGISTICS SYSTEM	0.000	0.000	1.456	2.374	2.402	2.477	1.946	Cont	Cont

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	0.000	0.000	1.465
Adjustment to Appropriated Value			-.009
Current Budget Submission	0.000	0.000	1.456

Change Summary Explanation: N/A

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Formulate the BAA announcement		XX	
Open the BAA		XX	
Awards for concept studies			X
Awards for prototype development			XXX
Prototype development			XXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#9: AGING AIRCRAFT SUSTAINMENT TECH.	0.000	0.000	4.051	4.131	4.481	5.164	5.408	Cont	Cont

A. Mission Description and Justification:

Weapon systems, particularly aircraft, are staying in the inventory much longer than originally anticipated. For example, the KC-135 had a 40 year design life and is now planning to stay in service for 86 years. Similar life extensions also apply to the B-52 and the C-130. The result is often aircraft parts, that were never planned to be replaced, have to be procured and placed on the airplane. Unfortunately, the technical data, manufacturing processes and supplier base that originally provided these items are no longer available. These circumstances lead to unacceptably long logistics response times and increased costs.

A completely new strategy is needed to address this problem. It must encompass not only the design associated with re-engineering the item but also manufacturing techniques that can produce very low quantity items in a cost effective manner. A partnership among the DoD, manufacturing industries and academia has proven most effective in addressing the problem. Past models have shown that lead-times can be reduced from 273 days to 97 days for complex parts, new suppliers can be added to the base and costs significantly reduced.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000: N/A
(U) FY 2001: Based on preliminary studies the technologies needed to sustain aircraft that are in service longer than their design life will be identified. Development of better ways of sustainment will be started.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	0.000	0.000	4.074
Adjustment to Appropriated Value	-----	-----	-0.023
Current Budget Submission	0.000	0.000	4.051

Change Summary Explanation: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#9: AGING AIRCRAFT SUSTAINMENT TECH.	0.000	0.00	4.051	4.131	4.481	5.164	5.408	Cont	Cont

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

Quarters	FY 99 1234	FY 00 1234	FY 01 1234
Formulate BAA Announcement		X	
Open BAA		XX	XXXX
Awards for concept development			X
Awards for prototype development			XXXX
Prototype Development			XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#10: VIRTUAL REALITY MEDICAL ASSEMBLY	0.000	0.000	1.963	1.781	2.005	2.039	2.077	Cont	Cont

A. Mission Description and Justification:

Defense Supply Center, Philadelphia (DSCP) has the responsibility to procure Medical Assemblies for the Services. These Medical Assemblies are complex in nature and change frequently to accommodate new types of form, fit, function, and utility. This program will attempt to utilize virtual reality technology to reduce lead times, to reduce the logistics footprint, and to reduce overall assembly life-cycle costs.

DSCP will begin the effort in the FY 01 timeframe. During FY 01, Joint Application Development (JAD) sessions will be held to formalize requirements. Market analysis will be performed to identify the most appropriate virtual reality technology to employ, and detailed system specifications will be created. In FY 02, a prototype of first-aid kits will be developed. In addition, formal requirements will be developed for a more complex medical assembly. In FY 03, the first-aid kit assembly will be made ready for a production environment, the more complex medical assembly will be prototyped, and commercial data interfaces will be established. In FY 04, DSCP will prototype an entire field hospital assembly and will look to apply the technology to other processes within DLA. In FY 05, DSCP plans for full-scale production and demonstrations.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000: N/A
(U) FY 2001: The studies for Virtual Medical Assembly will be awarded and prototypes will begin to be developed.

B. Program Change Summary: N/A

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	0.000	0.000	1.974
Adjustment to Appropriated Value	-----	-----	-0.011
Current Budget Submission	0.000	0.000	1.963

Change Summary Explanation: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#10: VIRTUAL REALITY MEDICAL ASSEMBLY	0.000	0.000	1.963	1.781	2.005	2.039	2.077	Cont	Cont

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

Quarters	FY 99 1234	FY 00 1234	FY 01 1234
Formulate the BAA announcement		XX	
Open the BAA		XX	
Awards for concept studies			X
Awards for prototype development			XXX
Prototype development			XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#11: FUTURE LOGISTICS R&D REQUIREMENTS	0.000	0.000	0.000	0.000	0.000	0.962	3.499	Cont	Cont

A. Mission Description and Justification:

These funds will be used for high risk and high payoff alternatives to the conventional investment programs to improve efficiency and lower costs of acquisition, supply management, and distribution.

(U) Program Achievements and Plans:

(U) FY 1999: N/A
(U) FY 2000: N/A
(U) FY 2001: N/A

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	0.000	0.000	0.000
Adjustment to Appropriated Value	-----	-----	-----
Current Budget Submission	0.000	0.000	0.000

Change Summary Explanation: N/A

C. Other Program Funding Summary: None

D. Schedule Profile: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#12: ON DEMAND MANUFACTURING/CATT	7.036	6.523	0.000	0.000	0.000	0.000	0.000	0.000	13.381

A. Mission Description and Justification:

This initiative is necessary to identify and establish commercial manufacturing capabilities so that DLA Centers can acquire parts as they are needed (on demand) rather than investing in excessive stock, or risking non-availability of essential parts when needed. Contracting relationships will be established to obtain small quantities of military unique items of low demand, with significantly lower costs and greatly improved response time. This is an effort to use private sector manufacturers, in addition to all other measures to obtain parts quickly. In FY 98 it built a program related to the USAF Computer Aided Technology Transfer (CATT) program. CATT establishes a network of companies to produce parts in a very short production lead-time with minimum administration.

(U) Program Achievements and Plans:
(U) FY 1999:
Award model contract for ODM buying capability and capacity field tools for ODM division support.
(U) FY 2000: Continue capacity field tools for ODM division support.
(U) FY 2001: N/A

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	6.908	0.898	0.000
Adjustments to Appropriated Value	+0.128	+5.625	-----
Current Budget Submission	7.036	6.523	0.000

Change Summary Explanation: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#12: ON DEMAND MANUFACTURING/CATT	7.036	6.523	0.000	0.000	0.000	0.000	0.000	0.000	13.381

C. Other Program Funding Summary: None

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Continue work at centers to develop contractual vehicles with industry	XXXX	XXXX	
Begin funding USAF related efforts (CATT)	X		
Establish ODM on EMALL	XXXX	XXXX	

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#13: GULF COAST MARITIME	1.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.930

A. Mission Description and Justification:

The Gulf Coast Center continued its research, application, and demonstration responsibilities in this effort. The program continued to support industrial, Navy, Defense Advanced Research Project Agency, and Department of Defense initiatives and priorities. The Gulf Coast Center continued to jointly develop projects with industrial partners such as Mobile Offshore Base, the CVX, a portfolio for Ship Designs, and other maritime technology demonstration projects.

(U) FY 1999: Simulation Based Design efforts at the Gulf Coast Region Maritime Technology Center.

*Awarded new contract to Gulf Coast Center to continue Simulation Based Design activities.
*Maintained state-of-the-art simulated based design with virtual reality technologies.
*Maintained open, scalable architecture compatible with HLA requirements established by DoD.
*Established state-of-the-art communications networks to ensure remote site access to the SBD resources as well as distribution to remote sites.
*Assisted industry, government and academic partners in development of prototype systems related to SBD.
*Starting to establish a collaborative design and engineering environment such that optimization of multiple functional parameters, including performance, manufacture, operations, logistics, training, cost, and schedule can be performed.
*Continued to jointly develop projects with industrial partners such as Mobile Offshore Base, support to the CVX, and other maritime technology demonstration projects.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	0.000	0.000	0.000
Adjustment to Appropriated Value	+1.930	-----	-----
Current Budget Submission	1.930	0.000	0.000

Change Summary Explanation: FY 99 $1.930 increase reflects ($2.0 million Congressional add, less undistributed reductions) transferred from DARPA to DLA.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#13: GULF COAST MARITIME	1.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.930

C. Other Program Funding Summary: None

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Communications Net established	XX		
Assist industry	XXX		

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#14: COMPETITIVE SUSTAINMENT	0.000	0.982	0.000	0.000	0.000	0.000	0.000	0.000	0.982

A. Mission Description and Justification: Competitive Sustainment was added by Congress in recognition of the need to substantially reduce the cost of support for aging weapon systems. The project will conduct pilot projects that involve teams of Government and Industry members in the following five areas: 1) effective supply partnerships; 2) significant improvement in quality and access to technical data; 3) a streamlined maintenance process; 4) upgrade strategies for increased reliability and 5) innovative training. The goals are to reduce total costs of spares/replacements by 25%, cut the time from requirement to delivery for supplies by up to 75% and cut repair cycle time by at least 50%.

(U) Program Accomplishments and Plans:
(U) FY 1999: N/A
(U) FY 2000: Pilot projects will be initiated
(U) FY 2001: N/A

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	0.000	0.000	0.000
Adjustment to Appropriated Value	0.000	0.982	-----
Current Budget Submission	0.000	0.982	0.000

Change Summary Explanation: FY 00 $0.982 increase reflects a congressional add for FY 00.

C. Other Program Funding Summary: No funding dependencies from other Agencies. Being coordinated with Army and Air Force Sustainment programs.

D. Scheduled Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
CBD Announcement		X	
Award		X	
Performance		X	XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2 Exhibit)		DATE: FEBRUARY 2000							
APPROPRIATION/BUDGET ACTIVITY:		Program Element:							
RTD&E, Defense-Wide/Budget Activity 3		0603712S LOGISTICS R&D TECHNOLOGY DEMONSTRATON							
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#15: DEFENSE MICROELECTRONICS ACTIVITY	0.000	2.943	0.000	0.000	0.000	0.000	0.000		

A. Mission Description and Justification:

DMEA's mission is to leverage advanced technologies to extend the life of weapon systems. DMEA is the Executive Agent for DOD Integrated Circuit (IC) Microelectronics Diminishing Manufacturing Sources and Material Shortages (DMSMS). As such, DMEA has identified a set of applied research projects that evaluate the feasibility and practicality of some candidate solutions several broad classes of microelectronics components that are strategically important to DOD. DMEA's RDT&E program is comprised of a mix of studies, investigations and planning efforts for developing solutions to the technological challenges of emerging microcircuit obsolescence using leading-edge microelectronics technology.

(U) Program Achievements and Plans:

(U) FY 2000: Continued development of a viable method to deposit ultra-pure silicon, which is the fundamental material for microelectronics and semiconductor devices. Continue to develop methods for replacing highly complex microcircuits using VHDL, modern synthesis tools, programmable cores, and silicon foundry resources to achieve FFF replacements while minimizing design methodologies and processes to emulate digital logic, analog, mixed signal and power microelectronic components. Applies to a wide range of systems e.g., F-22, B-2, AWACS, F-16, F-15, F-14, GPS, USQ-113, JAST, MAST, EA-6B, M-65, AN/TSC-93B, and AN/GSC-49(V).

B. Program Change Summary: FY00 increase of $2.943 reflects $3.0 million congressional add less $.057 million in reductions.

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	0.000	0.000	0.000
Adjustment to Appropriated Value	-----	+2.943	-----
Current Budget Submission	0.000	2.943	0.000

C. Other Program Funding Summary: No funding dependencies on other programs.

D. Schedule Profile:

	FY99	FY00	FY01
Quarters	1234	1234	1234
Ultra-pure Silicon Methodology	xxxx	xxxx	xx
Programmable core Solution Sets	xxxx	xxxx	xxxx

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE: FEBRUARY 2000							
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3		Program Element: 0603805S DUAL USE APPLICATIONS PROGRAM							
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
TOTAL PROGRAM ELEMENT: NATIONAL CENTER FOR MANUFACTURING SCIENCES (NCMS)	5.938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.938

A. Mission Description & Budget Item Justification:

The Defense Logistics Agency (DLA) has implemented policies and practices to reduce its operating and support costs while providing service to military customers. DLA continues to focus on issues such as total asset visibility; information technology, security and integration; diminishing sources; small-lot-volume manufacturing; privatization and outsourcing. This program depends on the National Center for Manufacturing Science (NCMS), as a not-for-profit consortium of about 235 defense and non-defense industry members, to provide DLA direct access to the best commercial practices, manufacturing technology, and out-sourcing lessons learned, and more information that is currently resident with the membership. NCMS will perform the accounting, contracting and legal, administrative, and program management functions for each project, and will interact with industry, state and other federal agencies, other small consortia, and academia.

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3	Program Element: 0603805S DUAL USE APPLICATIONS PROGRAM

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
NATIONAL CENTER FOR MANUFACTURING SCIENCES (NCMS)	5.938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.938

A. Mission Description and Justification:

Program Element: One of the initial projects among the NCMS programs, Commercial Technology for Maintenance Activities (CTMA), will dramatically change the current logistical system as it exists today. DLA will be able to develop and offer users new repair technologies, business practices, sourcing, management, and controls that were previously not available through normal contracting practices. The initial phase of CTMA will involve evaluation of selected candidate projects by a Cost Analyst who will determine the benefit and pay back to performers and project managers, and the execution of the projects leading to implementation and realization of the expected benefits.

(U) Program Accomplishments and Plans:
(U) FY 1999
*Application of metrics; implementation.
(U) FY 2000 N/A
(U) FY 2001 N/A

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	5.982	0.000	0.000
Adjustment to Appropriated Value	-.044	-----	-----
Current Budget Submission	5.938	0.000	0.000

C. Other Program Funding Summary:
None
Related Programs: DARPA's NCMS program initially transferred to DLA under PB #0603805S in FY 97. FY 99 reflects a +$6 million congressional add (less undistributed reductions).

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		DATE: FEBRUARY 2000							
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 3		Program Element: 0603805S DUAL USE APPLICATIONS PROGRAM							
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
NATIONAL CENTER FOR MANUFACTURING SCIENCES (NCMS)	5.938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.938

D. Schedule Profile:
NCMS/CTMA starts out by analyzing cost/benefits of candidate projects To Be Determined.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
NCMS/CTMA-Phase II	XXXX	N/A	N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7			Program Element: 0708011S MANUFACTURING TECHNOLOGY						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
TOTAL PROGRAM ELEMENT	25.843	13.472	7.090	7.937	8.764	8.965	9.147	Cont	Cont
#1: Combat Rations	1.880	1.750	1.871	1.974	1.972	2.013	2.060	Cont	Cont
#2: Apparel Research Network	2.789	2.331	2.295	2.344	2.522	2.648	2.664	Cont	Cont
#3: American Metalcasting Consortium	2.073	1.932	2.059	2.313	2.311	2.317	2.407	Cont	Cont
#4: Rapid Acquisition of Manufactured Parts	7.917	4.506	0.000	0.000	0.000	0.000	0.000	Cont	12.423
#5: Casting Emission Reduction Prog (CERP)	11.184	0.000	0.000	0.000	0.000	0.000	0.000	Cont	11.184
#6: Forging Lead Time Technology (FLTT)	0.000	0.000	0.865	1.306	1.959	1.987	2.016	Cont	Cont
#7: Aging Aircraft Sustainment Technology	0.000	2.953	0.000	0.000	0.000	0.000	0.000	Cont	Cont

A. Mission Description & Budget Item Justification:
Manufacturing Technology (ManTech) reduces costs and lead times, and increases quality, by developing and applying advanced manufacturing technology. DLA ManTech includes Combat Rations Network for Technology Implementation (CORANET), Apparel Research Network (ARN), American Metalcasting Consortium (AMC).

#1. CORANET assures combat ration availability of specified variety, quality, and affordability to the Components through commercial-military integration, ration processing and packaging research, and menu variety and producibility improvement. CORANET is part of the Joint Defense Manufacturing Technology Program, Advanced Manufacturing Enterprise Strategic Plan.
#2. ARN concentrates on achieving customer driven uniform manufacturing by establishing electronic links among all participants in the supply chain from the end user to the fabric supplier. The program is part of the Joint Defense Manufacturing Technology Program, Advanced Manufacturing Enterprise Strategic Plan.
#3. AMC develops and delivers cost effective weapons parts. It also develops better casting processes. The program is part of the Joint Defense Manufacturing Technology Program.
#4. RAMP supplements the initiative of the Emall by addressing small quantity non-standard parts made to order. RAMP tries to use electronic communications and complete bid packages to reduce ALT, and reduces PLT by rapid manufacturing planning and execution. The program was initiated by DARPA and transferred to DLA from USN for management.
#5. CERP finds materials and processes which allow industry and organic DoD foundries to meet stringent emission requirements and still provide cost competitive metal castings.
#6. FLTT will develop ways to make forgings for land, sea, and air weapons that are better, cheaper, and faster to produce.
#7. AAST will develop tools for technical data package modernization, tools for capturing, modifying and retaining process models so that older items, which have not been made for a number of years, can be put back into production quickly; best practices for qualification of new processes and materials, when old processes are no longer commercially available.

FY 2001 BUDGET REVIEW

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY:	Program Element:
RTD&E, Defense-Wide/Budget Activity 7	0708011S MANUFACTURING TECHNOLOGY

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	26.036	6.665	7.392
Adjustment to Appropriated Value	-0.193	+6.911	-.302
Congressional Rescission		-.104	
Current Budget Submission	25.843	13.472	7.090

Change Summary Explanation: FY 99 reflects -$193 thousand in congressional undistributed reductions. FY 00 reflects a congressional add -- +$3 million for Aging Aircraft Sustainment Technology; and (-$104 thousand) for gov't – wide rescission and (-$45 thousand) for inflation savings. FY 00 also reflects an increase of (+3.956 million) internally reprogrammed from five LOG R&D projects and internal realignment of $.550 million from three IP/ManTech projects to provide FY 00 funding for the RAMP program funded under this IP/ManTech program, PE0708011S. FY 01 reflects agency below threshold program adjustments to accommodate higher priority R&D requirements, and inflation savings.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7			Program Element: 0708011S MANUFACTURING TECHNOLOGY						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#1: COMBAT RATIONS	1.880	1.750	1.871	1.974	1.972	2.013	2.060	Cont	Cont

A. Mission Description and Justification

DLA buys about $150 million worth of Combat Rations annually. The product is military unique. The limited industrial base is barely capable of producing variety and quantities needed for surge, and is dependent on orders from Government to remain viable. This initiative ensures that DLA will have an industrial base to continue to support warfighters with needed combat rations. The program Partners develop new technology for implementation in their plants, after demonstrations conducted at Rutgers University, unifying the civilian and military manufacturing processes to expand the base. The Joint Steering Group of users, designers, and buyers assures that selected projects contribute to DLA mission.

(U) Program Accomplishments and Plans:

(U) FY 1999

*Continually reviewed present and future Government needs with producers, identified technology opportunities, made contract awards to Combat Rations Network Partners to address cost, quality, and surge capacity of combat rations. (including MREs, Tray Pack items, Unitized Group Rations, etc.).
*Implemented quality data management system at DSCP.
*Supported implementation of multi-unit leak detection, leveraged Warstopper funding.
*Continued to examine industrial base opportunities with Partners.
*Continued to develop new technology for transfer and implementation into plants in the industrial base.
*Continued to provide assistance for implementation of new technology.

(U) FY 2000

*Continue to examine industrial base opportunities with Partners.
*Continue to develop new technology for transfer and implementation into plants in the industrial base.
*Continue to provide assistance for implementation of new technology.
*Implement MRE Menu Variety vs Cost Decision Support Package at Army & DLA facilities.
*Update strategic plans and business case for CORANET.
*Continue work on technology development and implementation.
*Evaluate Ultrasonic Technology for cost/quality benefits in combat ration manufacturing, with Ohio State University.
*Integrate Machine Vision capability to prevent seal defects on polymeric tray and Multivac pouch sealing equipment.

(U) FY 2001

*Update strategic plans and business case for CORANET.
*Continue work on technology development and implementation.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#1: COMBAT RATIONS	1.880	1.750	1.871	1.974	1.972	2.013	2.060	Cont	Cont

B. Program Change Summary: Restructure to emphasize implementation of an existing program.

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	1.894	1.880	1.882
Adjustment to Appropriated Value	-.014	-.130	-.011
Current Budget Submission	1.880	1.750	1.871

Change Summary Explanation: N/A

C. Other Program Funding Summary: No funding dependencies.
Related Programs: None

D. Schedule Profile: The Combat Ration Network for Technology Implementation (CORANET) is the ManTech program managed at DLA Headquarters, through contracts from the Defense Supply Center, Philadelphia.

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
CORANET Project Areas Identified:			
Multiple Unit Leak Detection of MRE Pouches	XXX		
Machine Vision Inspection of Combat Rations	XXXX	XXXX	XXXX
Polymetric Tray Seal Integrity Testing	XXX	XXXX	XXXX
Polymetric Tray Demonstration Production	XXXX	XXXX	XXXX
Retort Rack Material Improvement Study	XXXX	XXXX	
Menu Variety vs Cost Decision Matrix	XX X	XXXX	
Modified Atmosphere Packaging Sensitive Items	XXXX	XX	
Ultrasonic Seal/Inspect MRE Pouches Study	XXXX	XXX	
Horizontal F/F/Seal Ration Demo Production	XXXX	XXXX	XXXX
Verification of MRE Specification Quality Requirements	X	XXX	
Retort Rack Material and Design Study	X	XXX	
Acceptance Testing Protocol, MRE Patch Film Study	X	XXX	

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

A. Project Cost Breakdown

Combat Rations

Project Cost Categories	FY 99	FY 00	FY 01
a. Manufacturing Process Support Costs	1.880	1.750	1.871

B. Budget Acquisition History and Planning Information

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
Note: All contracts are CPFF, with Fee=Zero								
Rutgers	CPFF/C	06/10/96	N/A	1.880	1.750	1.871	Cont	Cont
Ohio State	CPFF/C	07/03/96						
Texas A&M	CPFF/C	07/11/96						
Wash State	CPFF/C	07/03/96						
IITR (NCFST)	CPFF/C	07/11/96						
R&DA for MIL Rations	CPFF/C	07/24/96						
Right Away Foods	CPFF/C	07/11/96						
Stable Foods	CPFF/C	08/14/96						
Ameriqual Foods	CPFF/C	07/22/96						
Sopakco	CPFF/C	07/22/96						
Sterling Foods	CPFF/C	07/22/96						

Government Furnished Property N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: SEPTEMBER 1999
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#2: APPAREL RESEARCH NETWORK	2.789	2.331	2.295	2.344	2.522	2.648	2.664	Cont	Cont

A. Mission Description and Justification:

The Department of Defense, through the Defense Logistics Agency, purchases an average of $1 billion of clothing and textile items per year. Our current lead time is up to 15 months and our current inventory acquisition value is over $2 billion. ARN is a Manufacturing Technology program to improve the responsiveness of the industrial base that supplies the clothing items to the Military Services. It enables the small business oriented apparel producers to access state-of-the-art technologies through its R&D and technology transfer mechanism. The goal of this program is to reduce the average apparel lead time from 6 months to 6 weeks and to reduce the inventory carrying costs by 50%. A 50% reduction in carrying cost would reduce the cost to the customer by 20%.

(U) Program Accomplishments and Plans:
(U) FY 1999
*The retail inventory draw down of 59%/$5.2M at MCRD San Diego and 51.8%/$4.2M at MCRD Parris Island has been achieved since May 1998.
*Continued to conduct Virtual Prime Vendor demonstrations (Clemson and Cal Poly) that provide supply chain asset visibility, automated electronic ordering process and inventory forecasting capabilities.
(U) FY 2000
*Integrate 3-D Scanning and Balanced Inventory Flow Systems at MCRD, San Diego.
(U) FY 2001
*Lead-Time & Inventory Reduction includes other services.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	2.810	2.570	2.570
Adjustment to Appropriated Value	-.021	-.239	-.275
Current Budget Submission	2.789	2.331	2.295

Change Summary Explanation: FY 01 reflects agency below threshold program adjustments to accommodate higher priority R&D requirements.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#2: APPAREL RESEARCH NETWORK	2.789	2.331	2.295	2.344	2.522	2.648	2.664	Cont	Cont

C. Other Program Funding Summary: No funding dependencies.

D. Schedule profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Operate Clemson Demo	XXXX	XXXX	XXXX
Operate Cal Poly Demo	XXXX	XXXX	XXXX
3-D Scan Data Extractions & System Integration	XXXX	XXXX	
Balanced Inventory Flow-Supply Chain Integration	XXXX	XXXX	XXXX
Special Measurement Processes	XXXX		

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

A. Project Cost Breakdown
Apparel Research Network

Project Cost Categories	FY 99	FY 00	FY 01
a. Manufacturing Process Support Costs	2.789	2.331	2.295

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
Note: All contracts are CPFF, with Fee=Zero								
Anthropology Research Project, Inc.	CPFF/C	12/09/94	N/A	2.789	2.331	2.295	Cont	Cont
Beecher Research Co	CPFF/C	01/23/95						
Cal Poly Univ, Pomona	CPFF/C	12/09/94						
Clemson University	CPFF/C	12/09/94						
Cyberware	CPFF/C	05/10/95						
EDI Integration	CPFF/C	12/13/94						
Georgia Institute of Technology	CPFF/C	12/09/94						
NCSU	CPFF/C	12/23/94						
Southern Tech	CPFF/C	12/09/94						
Ohio University	CPFF/C	01/12/95						

Government Furnished Property N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#3: AMERICAN METAL CASTING (AMC)	2.073	1.932	2.059	2.313	2.311	2.317	2.407	Cont	Cont

A. Mission Description and Justification:

Metal castings are used whenever a complex metal shape is needed at an economical price. Many critical weapon system spares are castings. Castings frequently appear to be the cause of lead time problems. The program demonstrates how to design, procure and implement castings to save time and money.

CAST-IT teams have worked with DLA Supply Centers and Military Services and Weapons Systems Primes and Subs to demonstrated $5.1M annual savings, and 50% or more lead-time savings, on ship to ship refueling sockets, 120mm mortar, C141 rod guide, M1 breech opening handle, M284 carrier housing, BAT missile fuselage, Bradley Commander's Independent Viewer, MEP 16 generator, Fast Frigate Thrust Assembly, and other parts.

Advanced Metalcasting design and acquisition processes have been deployed at Army Benet Labs and Watervliet Arsenal, and are being deployed for DSCR and DSCC, and Tank Automotive Command. This part of the program upgrades the technical skills of engineering, supply, quality, and procurement personnel so that lead time problems are prevented.

Foundry processes are being improved through research at Pennsylvania State University (improved dimensional control), University of Alabama - Birmingham (machining reject reduction and aluminum reliability), University of Tennessee (high alloy casting weldability), Ohio State University (machining reject reduction, computer visualization, short run processes, and dimensional control), and Northwestern University (fast free form fabrication).

(U) Program Accomplishments and Plans:
(U) FY 1999
*Integrated metalcasting design and acquisition at DLA sites to save over $45M in acquisition and lifecycle costs as demonstrated by M1A1 Ice Cleats and Frigate Thrust Assemblies.
(U) FY 2000
*Increasing metalcasting technology deployment throughout DLA and DoD to further reduce weapon system costs especially in On Demand, Virtual Manufacturing Enterprise.
(U) FY 2001
*Develop next generation short run, rapid response metalcasting technologies for weapon system lifecycle extension and support.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#3: AMERICAN METAL CASTING (AMC)	2.073	1.932	2.059	2.313	2.311	2.317	2.407	Cont	Cont

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	2.089	2.215	2.071
Adjustment to Appropriated Value	-.016	-.283	-----
Current Budget Submission	2.073	1.932	2.059

Change Summary Explanation: N/A

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
CAST-IT	XXXX	XXXX	XXXX
Advanced Design & Acquisition	XXXX	XXXX	XXXX
Foundry Research	XXXX	XXXX	XXXX

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

A. Project Cost Breakdown
American Metal Casting (AMC)

	FY 99	FY 00	FY 01
a. Manufacturing Process Support Costs	2.073	1.932	2.059

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
ATI	Cost Share	10/26/94	N/A	2.073	1.932	2.059	Cont	Cont

Government Furnished Property: None

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#4: RAPID ACQUISITION OF MANUFACTURED PARTS	7.917	4.506	0.000	0.000	0.000	0.000	0.000	0.000	12.423

A. Mission Description and Justification:

(U) RAMP develops, prototypes, and demonstrates the capability for data-driven, just-in-time, low volume manufacturing of hard to obtain parts. RAMP has demonstrated the capability to reduce the total lead-time for hard to find parts from over 400 days to less than 30 days. This is accomplished with the application of advanced design and manufacturing technology. RAMP leads in the development of Standard for Exchange Product Data (STEP) protocols and the application and development of tools that use STEP data to reduce lead times. Small parts manufacturing is vital to DoD's spares and new acquisition business since the DoD rarely buys items in large quantities.
(U) Program Accomplishments and Plans:
(U) FY 1999
*Factory Control System installed in Anniston Army Depot, NADEP Cherry Point and Tobyhanna Army Depot.
*ODM Quote Module prototype.
(U) FY 2000: N/A
(U) FY 2001: N/A

B. Program Change Summary: Program was transferred from Navy to DLA beginning in FY 1998.

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	7.976	0.000	0.000
Adjustment to Appropriated Value	-.059	+4.506	-----
Current Budget Submission	7.917	4.506	0.000

Change Summary Explanation: This is a congressionally funded program. FY 99 adjustment reflects congressional undistributed reductions. FY 00 reflects (+$4.5M) in Agency funding provided to support the program as it transitions to self sufficiency by FY 01.

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Advanced Manufacturing	XXXX	N/A	N/A
Product Data Engineering	XXXX		
Electronic Commerce	XXXX		

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

A. Project Cost Breakdown
Rapid Acquisition of Manufactured Parts (RAMP)

Project cost Categories	FY 99	FY 00	FY 01
a. Manufacturing Process Support Costs	7.917	4.506	0.000

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor	Contract Type	Award	Performing Project	FY 99	FY 00	FY 01	Budget to Complete	Total Program
SCRA	Cost	10/26/94	N/A	7.917	4.506	0.000	0.000	12.423

Government Furnished Property: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#5: CASTING EMISSION REDUCTION PROGRAM	11.184	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.184

A. Mission Description and Justification:

During the last decade, the number of US sources for metal castings has shrunk by over one fourth due in large part to the increased environmental regulations. With an overall DoD acquisition of approximately $2.3 billion in military specific metal castings, and an industry continuing to shrink or move off-shore, it is critical to continued supply to find environmental solutions which allow the industry to remain domestic and cost competitive. The Casting Emission Reduction Program is a program who's mission is to find materials and processes which allow industry and organic DoD foundries to meet stringent emission requirements and still provide cost competitive metal castings. Participants include McClellan AFB, the USCAR (comprised of the three U.S. auto makers), U.S. EPA, California Air Resources Board, and the American Foundrymen's Society (AFS).

Program Accomplishments and Plans:
FY 1999
*Researched sand morphology and interaction with non hazardous binder products Phase I
*Acquired, install, and test dry sand process and aluminum
*Researched real-time particulate matter measurement Phase II
*Installed and validate real-time particulate matter measurement devices Phase II
*Researched sand morphology and interaction with non hazardous binder products Phase II
*Improved accuracy of continuous emission monitoring systems
*Operated and support testing measurement and data reporting Phase II
*Continued operation and support for pilot plant testing
*Developed and deliver low level measurement instrumentation Phase II (AIGER)
*Delivered data via Internet
*Moved and revalidate Pre-Production facility
*Modified pilot facility to accommodate testing discoveries
FY 2000: N/A
FY 2001: N/A

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#5: CASTING EMISSION REDUCTION PROGRAM	11.184	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.184

B. Program Change Summary: This is a congressionally funded program.

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President's Budget Submission	11.267	0.000	0.000
Adjustment to Appropriated Value	-0.083	-----	-----
Current Budget Submission	11.184	0.000	0.000

Change Summary Explanation: FY 99 reflects congressional undistributed reductions.

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
CERP	XXXX	N/A	N/A

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

A. Project cost Breakdown
Casting Emission Reduction Program (CERP)

Project Cost Categories	FY 99	FY 00	FY 01
a. Test & Evaluation	11.184	0.000	0.000

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
McClellan AFB	Cost	On-going	N/A	11.184	0.000	0.000	0.000	11.184
GSA	CPFF/C	On-going	N/A					
TSI	CPFF/C	On-going	N/A					
Radian	CPFF/C	On-going	N/A					
UC Davis	CPFF/C	On-going	N/A					
Other Contract Supt	Cost	TBD						

Government Furnished Property: Unknown at this time. Will be determined during the transition.

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#6: FORGING LEAD TIME TECHNOLOGY	0.000	0.000	0.865	1.306	1.959	1.987	2.016	0.000	Cont

A. Mission Description and Justification:

Forging Lead Time Technology will develop ways to make forgings for land, sea, and air weapons that are better, cheaper, and faster to produce. Forgings are frequently identified as lead-time drivers for many weapons systems. Traditional forging processes are characterized by trial and error, which can be very expensive when small quantity spare parts are needed. This program will develop technology to make small quantities of spare parts quickly and economically. This technology will be applied to DLA requirements so that weapons system availability is improved.
(U) Program Accomplishments and Plans:
(U) FY 1999 N/A
(U) FY 2000 N/A
(U) FY 2001
*Begin technology development. Demonstrate industry best practices for forging supply chain management on DLA parts.

B. Program Change Summary:

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	0.000	0.000	0.869
Adjustment to Appropriated Value	-----	-----	0.004
Current Budget Submission	0.000	0.000	0.865

Change Summary Explanation: N/A

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:

	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
Technology Developments			XXXX
Spare Parts Lead Time Demonstration			XXXX

FY 2001 BUDGET REVIEW

RDT&E BUDGET PROJECT JUSTIFICATION SHEET (R-2a Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 7	Program Element: 0708011S MANUFACTURING TECHNOLOGY

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
#7 AGING AIRCRAFT SUSTAINMENT TECH	0.000	2.953	0.000	0.000	0.000	0.000	0.000	0.000	2.953

A. Mission Description and Justification: DLA is responsible for structural airframe parts for many old aircraft including B-52, KC-135 and F-15. Better, faster, cheaper methods of manufacture and supply of consumable parts need to be developed.

(U) Program Accomplishments and Plans:
FY 1999 N/A
FY 2000 Solicitation and Award
FY 2001 N/A

B. Program Change Summary: This is a Congressional Add.

	COST IN MILLIONS		
	FY 99	FY 00	FY 01
President’s Budget Submission	0.000	0.000	0.000
Adjustment to Appropriated Value	-----	+2.953	-----
Current Budget Submission	0.000	2.953	0.000

Change Summary Explanation: FY00 reflects a $3.0 million Congressional Add less Gov’t-wide rescission and inflation savings.

C. Other Program Funding Summary: No funding dependencies.

D. Schedule Profile:	FY 99	FY 00	FY 01
Quarters	1234	1234	1234
AAST	NA		
Issue competitive solicitation		XXXX	
Develop and Demonstrate Technology using FY 00 funds			XXXX

FY 2001 BUDGET REVIEW

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY:	Program Element:
RTD&E, Defense-Wide/Budget Activity 7	0708011S MANUFACTURING TECHNOLOGY

A. Project cost Breakdown
Aging Aircraft Sustainment Technology

Project Cost Categories	FY 99	FY 00	FY 01
a. Development and Demonstration	0.000	2.953	0.000

B. Budget Acquisition History and Planning Information
Performing organizations

This requirement will be competed.

Government Furnished Property: None.

Exhibit R-2, RDT&E Budget Item Justification					Date: February 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE DCMC Initiatives: 0605013S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
0001 Systems Modification and Development	0	0	1.671	.738	1.394	3.601	4.108	Continuing	Continuing

A. Mission Description and Budget Item Justification

DCMC Initiatives pertain to the efforts associated with information technology programs within DCMC. To support DoD's revolution in business affairs, DCMC is conducting a study to analyze DCMC's end-to end processes to improve efficiency and effectiveness of internal contract administration processes to support its customers. DCMC must leverage information technology and it's infrastructure to improve the services it provides to the military services and agencies with the right tools to empower the DCMC workforce.

Specifically, these efforts include the transformation of the current 21 automated information systems into a more robust tool set for the timely, complete, and accurate data sets that must be available at the lowest levels of DCMC to ensure that sound business decisions are made. Next, visibility of key data and information at the team level will enhance data integrity and support performance based management allowing teams to self direct the application of limited resources to the appropriate priorities. Finally, DCMC's use of information technology will support the compilation of data to support the command level review without causing undue burden on the field organizations.

The transformation of automated system will include improvements to modern data transmission formats (64 BIT), improved security features, increased functionality, retiring antiquated systems and source code, and combining requirements thereby reducing acquisition/maintenance costs.

Exhibit R-2, RDT&E Budget Item Justification					Date: February 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: DCMC Initiatives: 0605013S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0001 Systems Modification and Development	0	0	1.671	.738	1.394	3.601	4.108	Continuing	Continuing

B. Program Change Summary

	FY99	FY00	FY01	Total Cost
Previous President's Budget	0	0	0	Continuing
Adjustments to Appropriated Value			+1.671	
Current/Budget Submit/President's Budget	0	0	1.671	Continuing

C. Other Program Funding Summary **(N/A)**

D. Schedule Profile

FY 2001 Plans:

o Develop improved automated information systems/tool sets for effective and efficient contract administration services provided to Military Services, Defense Agencies and customers.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 5	Program Element: 0605013S Information Technology (DCMC Initiatives)

A. Project Cost Breakdown
Defense Contract Management Command (DCMC) Initiatives

Project Cost Categories	FY 99	FY 00	FY 01
a. System Modification and Development	0.000	0.000	1.671

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
Various	TBD	TBD	N/A	0.000	0.000	1.671	Cont	Cont

Government Furnished Property N/A

Exhibit R-2, RDT&E Budget Item Justification					Date: February 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE Standard Procurement System (SPS): 0605015S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	0	0	15.772	11.223	7.448	4.313	4.280	Continuing	Continuing
0001 Product Development	0	0	14.732	10.257	6.948	3.826	3.796	Continuing	Continuing
0002 Test and Evaluate	0	0	1.040	.966	.500	.487	.484	Continuing	Continuing

A. Mission Description and Budget Item Justification

- The Director of Defense Procurement identified the need for a standard procurement system for unclassified contracting activities of the US Army, US Navy, US Air Force, US Marine Corps, Defense Logistics Support Command, Defense Contract Management Command, and Other Defense Activities (ODA's). The Standard Procurement System (SPS) is a procurement system to support standardized data, policies and procedures for contract placement and contract administration for DoD unclassified contracting activities. The goals of the SPS are to: reduce problem disbursements, standardize DoD automated procurement functions, retire legacy systems, and contribute to the DoD paperless contracting initiative.

Exhibit R-2, RDT&E Budget Item Justification					DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Standard Procurement System (SPS): 0605015S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
Total PE Cost	0	0	15.772	11.223	7.448	4.313	4.280	Continuing	Continuing
0001 Product Development	0	0	14.732	10.257	6.948	3.826	3.796	Continuing	Continuing
0002 Test and Evaluate	0	0	1.040	.966	.500	.487	.484	Continuing	Continuing

0001 The Standard Procurement System (SPS) is based on modification of a commercial system. The system needs to be modified to support DoD requirements (Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulations (DFARS)). These requirements were not completely met by the initial commercial product. Product Development funds support the modifications necessary to meet the functional requirements.

0002 This project supports testing of additional functionality added to the SPS software. Testing types include operational test and evaluation efforts and product functionality exercises. Efforts will ensure that the SPS meets the requirements set forth by the procurement community.

B. Program Change Summary

	FY99	FY00	FY01	Total Cost
Previous President's Budget	0	0	0	
Adjustments to Appropriated Value			+15.772	Continuing
Current/Budget Submit/President's Budget	0	0	15.772	Continuing

C. Other Program Funding Summary (N/A)

Exhibit R-2, RDT&E Budget Item Justification)					DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Standard Procurement System (SPS): 0605015S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0001 Product Development	0	0	14.732	10.257	6.948	3.826	3.796	Continuing	Continuing

A. Mission Description & Budget Item Justification

0001 The Standard Procurement System (SPS) is based on modification of a commercial system. The system needs to be modified to support DoD requirements (Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulations (DFARS)). These requirements were not completely met by the initial commercial product. Product Development funds support the modifications necessary to meet the functional requirements.

B. Program Change Summary

	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	0	0	0	
Adjustments to Appropriated Value			+14.732	Continuing
Current/President's Budget Submission	0	0	14.732	Continuing

C. Other Program Funding Summary **(N/A)**

D. Schedule Profile

FY 2001 Plans (14.732)

- Continue development of scheduled functional requirement increases to the commercial software.
- Develop interfaces with logistics and finance systems for procurement communities to exchange data with SPS.

								DATE: February 2000	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Standard Procurement System (SPS): 0605015S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0002 Test and Evaluate	0	0	1.040	.966	.500	.487	.484	Continuing	Continuing

A. Mission Description & Budget Item Justification

0002 This project supports testing of additional functionality to the SPS software. Testing types include operational test and evaluation efforts and product functionality exercises. Efforts will ensure that the SPS meets the requirements set forth by the procurement community.

B. Program Change Summary	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	0	0	0	
Adjustments to Appropriated Value			+1.040	Continuing
Current/President's Budget Submission	0	0	1.040	Continuing

C. Other Program Funding Summary (N/A)

D. Schedule Profile

FY 2001 Plans (1.040)

- Test requirement development and validate system acceptability for next scheduled release of SPS software.
- Test interfaces developed for logistics and finance systems scheduled for deployment to procurement communities.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 5	Program Element: 0605015S Standard Procurement System (SPS)

A. Project Cost Breakdown
Standard Procurement System (SPS)

Project Cost Categories	FY 99	FY 00	FY 01
a. Product Development	0.000	0.000	14.732
b. Test and Evaluate	0.000	0.000	01.040

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
American Management Systems, Inc. (AMS)	IDIQ/C	08/96	N/A	0.000	0.000	14.732	Cont	Cont
Joint Inter-operability Test Center (JITC)	MOU	TBD	N/A	0.000	0.000	1.040	Cont	Cont

Government Furnished Property N/A

Exhibit R-2, RDT&E Budget Item Justification					Date: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					R-1 ITEM NOMENCLATURE Defense Human Resources Activity: 0605803S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	8.090	8.080	8.776	8.834	8.979	8.965	8.907	Continuing	Continuing
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

A. Mission Description and Budget Item Justification (See Enclosures)

The Department of Defense Human Resources Activity (DoDHRA) is a DoD-wide Field Activity chartered to support the Under Secretary of Defense for Personnel and Readiness (USD(P&R)).

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	8.090	8.080	8.776	8.834	8.979	8.965	8.907	Continuing	Continuing
0001 Joint Service Training & Readiness Systems Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

A. Mission Description and Budget Item Justification

0001 The Joint Service programs were established by the Secretary of Defense to improve the training and readiness of the Active and Reserve Components. The PE is located in Budget Activity 6, RDT&E Management Support, to expedite the prototype development of new training and readiness technologies and Joint Service training and readiness systems which improve the training and readiness effectiveness and enhance the performance of the military forces. It also facilitates the sharing of training and readiness information, while allowing for the transfer of emerging and innovative technologies among the Services and private sector.

0002 This project supports the Defense Human Resources Activity (DHRA) and DoD training managers (OSD, Joint Staff, Unified Commands, and the Services) in promoting more efficient and effective use of training resources, increasing the effectiveness of military training, and enhancing the readiness and performance of the military forces. Projects analyze the contributions to readiness of various training techniques and programs and use the results to expedite new training concepts and procedures that increase unit effectiveness or decrease costs. Emphasis is placed on developing analytical tools and systematic methodologies to improve training resource allocations.

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Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	8.090	8.080	8.776	8.834	8.979	8.965	8.907	Continuing	Continuing
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

A. Mission Description and Budget Item Justification (Continued)

0003 The project is located in Budget Authority 6, RDT&E Management Support, to administer testing programs which enable the Armed Services to select highly qualified military recruits. The DoD uses a single test, the Armed Services Vocational Aptitude Battery (ASVAB), to determine eligibility of military applicants and to report recruit quality data to Congress. High quality recruits are obtained from administering the ASVAB annually to approximately 600,000 applicants for Military Service as part of the DoD Enlistment Testing program, and to 1 million students in the DoD Student Testing program. Each Service also uses ASVAB test forms developed in this program as part of their in-service testing programs. New ASVAB test forms and related support materials are implemented every four years. This allows DoD to make measurement improvements as well as decrease the likelihood of test compromise. Ongoing RDT&E efforts include development and evaluation of procedures which (1) reduce or eliminate threats to the validity of the ASVAB test scores generated; (2) improve the efficiency of the test development, calibration, and validation process; and (3) improve selection and classification decisions made by each Service through more effective use of test score information. In addition, periodic assessments are required to provide DoD manpower planners and Congress with information on aptitude trends in the population from which recruits are drawn.

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	8.090	8.080	8.776	8.834	8.979	8.965	8.907	Continuing	Continuing
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

B. Program Change Summary

	FY99	FY00	FY01	Total Cost
Previous President's Budget	8.151	8.261	8.825	Continuing
Adjustments to Appropriated Value	-.061	-.042	-.049	
Congressional Rescission		-.139		
Current Budget Submit/President's Budget	8.090	8.080	8.776	Continuing

FY99 reflects -$61 thousand for Congressional undistributed reductions. FY00 reflects -$139 thousand for gov't-wide rescissions and -$42 thousand for inflation savings. FY01 reflects -$49 thousand for inflation adjustments.

C. Other Program Funding Summary **(N/A)**

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing

A. Mission Description & Budget Item Justification

0001 The Joint Service programs were established by the Secretary of Defense to improve the training and readiness of the Active and Reserve Components. The PE is located in Budget Activity 6, RDT&E Management Support, to expedite the prototype development of new training and readiness technologies and Joint Service training and readiness systems which improve the training and readiness effectiveness and enhance the performance of the military forces. It also facilitates the sharing of training and readiness information, while allowing for the transfer of emerging and innovative technologies among the Services and private sector.

B. Program Change Summary

	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	3.552	3.658	3.919	Continuing
Adjustments to Appropriated Value	-.027	-.080	-.022	
Current President's Budget Submission	3.525	3.578	3.897	Continuing

C. Other Program Funding Summary (N/A)

D. Schedule Profile

FY 1999 Accomplishments: (3.525)

- o Tested comprehensive DoD strategy to gain full benefit from embedded training technologies
- o Developed a system to archive joint training effectiveness data
- o Continued development of methods to reengineer individual training processes through the use of ADL
- o Studied effects of the Global Military Force Management Policy and its affect on management of Low Density High Demand units.
- o Began development of an architecture for interconnecting embedded training on combat platforms to support force training and mission rehearsal
- o Assessed Service programs contributing to or incorporating embedded training technology

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing

FY 2000 Plans (3.578)

- o Develop the capability that can be used to coordinate and oversee implementation of policies, procedures, and methods to reengineer individual training processes through the use of ADL
- o Sponsor prototype developments of ADL and embedded training technologies
- o Develop guidelines for using networked simulation to improve mission readiness through rehearsal and risk assessment
- o Develop a common DoD master plan for collaborative development and implementation of ADL
- o Support establishment and operation of an ADL Co-Lab for the assessment and conformance testing of ADL tools and prototypes as well as the development and promulgation of guidelines
- o Develop recommendations on ways JSIMS and supporting tools can be integrated into the Joint Experimentation process
- o Integrate the next-generation training simulation tools into joint training
- o Develop the analytical support for requiring that all new combat platforms include interconnectable embedded training
- o Continue to assess the use of embedded training by Services as examples and prototypes for extension.
- o Review the effects of civilian encroachment that is forcing reduced training opportunities at DoD ranges
- o Review the policy and funding structure that governs the use of training and testing ranges with a view to increasing cross-functional use

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0001 Joint Service Training & Readiness Systems & Development	3.525	3.578	3.897	3.925	3.952	3.946	3.920	Continuing	Continuing

FY 2001 Plans (3.897)

- o Coordinate ADL architecture, standards, and guidelines across DoD, federal agencies, and NATO allies
- o Refine the ADL Master Plan by focusing on opportunities for collaboration and reuse
- o Sponsor prototype training technology development and applications that support joint warfighting
- o Support the evolution and realization of joint training in the context of Joint Vision 2010
- o Assess the cost-benefit of distributed learning technologies
- o Support prototype development and assessment of DoD Knowledge Management Systems and Portals

FY 2002 Plans (3.925)

- o Continue to coordinate the evolution of ADL architecture, standards, and guidelines across DoD, federal agencies, and NATO allies
- o Update and expand the ADL Master Plan by focusing on inter-agency, combined, and coalition training with NATO allies and PfP countries
- o Sponsor prototype training technology development and applications that support joint, interagency, and coalition training communities
- o Assess the cost-benefit of new learning technologies, especially intelligent tutors and intelligent systems
- o Support prototype development, assessment, and application of DoD’s knowledge Management Systems and portals

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing

A. Mission Description & Budget Item Justification

0002 This project supports the Defense Human Resources Activity (DHRA) and DoD training managers (OSD, Joint Staff, Unified Commands and the Services) in promoting more efficient and effective use of training resources, increasing the effectiveness of military training, and enhancing the readiness and performance of the military forces. Projects analyze the contributions to readiness of various training techniques and programs and use the results to expedite new training concepts and procedures that increase unit effectiveness or decrease costs. Emphasis is placed on developing analytical tools and systematic methodologies to improve training resource allocations.

B. Program Change Summary

	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	2.847	2.853	3.077	Continuing
Adjustments to appropriated Value	-.021	-.063	-.017	
Current President's Budget Submission	2.826	2.790	3.060	Continuing

C. Other Program Funding Summary (N/A)

D. Schedule Profile

FY 1999 Accomplishments (2.826)

- Developed a system to provide resources, facilities and simulations for effective Service-level and joint training
- Updated policy, guidelines and DoD directives for the conduct of Training Effectiveness Analyses (CTEA)
- Developed recommendations to increase the use of private-sector entities in performing training functions
- Examined opportunities for training consolidation

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0002 Defense Training Resource Analysis	2.826	2.790	3.060	3.083	3.108	3.103	3.082	Continuing	Continuing

FY 2000 Plans (2.790)

- Continue development of a system to provide resources, facilities and simulations for effective Service-level and joint training
- Conduct a “model” CTEA for a large-scale training simulation, such as JSIMS
- Demonstrate methods to estimate future resource needs for readiness
- Test recommendations to increase the use of private-sector entities in performing training functions

FY 2001 Plans (3.060)

- Test system development to provide resources, facilities and simulations for effective Service level and joint training
- “Normalize” Status of Readiness and Training System (SORTS) to address changes in training policy and force structure
- Analyze test results of program to increase use of private sector entities in performing training functions
- Continue development and implementation of policy for conducting cost-effective Joint, Service, and Agency training

FY 2002 Plans (3.083)

- Assess the TEA and CTEA efforts accomplished under TEA/CTEA policy, guidelines, and directives after they mature

								DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY: 0400/06					**PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S**				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

A. Mission Description & Budget Item Justification

0003 The primary mission is to test and implement more accurate methods of assessing aptitudes required for military enlistment, success in training, and performance on the job. Also, it includes implementing methods that are useful in the identification of persons with the high aptitudes required by today's smaller and technically more demanding military.

B. Program Change Summary

	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	1.752	1.750	1.829	Continuing
Adjustments to Appropriated Value	- .013	-.038	-.010	
Current President's Budget Submission	1.739	1.712	1.819	Continuing

C. Other Program Funding Summary **(N/A)**

D. Schedule Profile

FY 1999 Accomplishments (1.739)

Enlistment Testing Program (ETP) (1.043 million)

- Evaluated the impact of changing the structure of the ASVAB
- Developed psychometric procedures for on-line calibration of new ASVAB test items and reducing item exposure in computerized adaptive testing
- Developed new test items for out-year paper and pencil and CAT-ASVAB forms (for years 2003 and beyond)
- Finalized development, including equating, of new CAT-ASVAB forms
- Began analyses to develop a new score scale
- Began development of an automated item writing procedure

Student Testing Program (STP) (.696 million)

- Published revisions for the ASVAB Technical Manual for the ASVAB 18/19 Career Exploration Program
- Evaluated the STP and began developing a plan for improving the program
- Began an evaluation of the effect of response bias on the Interest Finder

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

FY 2000 Plans (1.712)

DoD Enlistment Testing Program (ETP) (1.027 million)

- Implement new ASVAB structure
- Continue development of psychometric procedures for on-line calibration of new ASVAB test items and reducing item exposure in computerized adaptive testing. Publish results to-date in professional literature
- Complete analyses to develop new score scale
- Conduct other analyses of normative data and publish this year or next
- Document results of the automated item writing work
- Begin development of procedures to detect item compromise and item parameter drift on computer adaptive tests
- Evaluate feasibility of using CAT-ASVAB at Mobile Examining Team (MET)sites
- Begin investigating the “Coding Speed” construct and begin development of the ASVAB Technical manual

DoD Student Testing Program (STP) (.685 million)

- Complete plan for improving the STP
- Complete Interest Finder response bias evaluation
- Evaluate STP high school participation rate
- Revise *Military Careers*
- Begin analyses to use ASVAB and measures of vocational interest to predict civilian job success
- Prepare for implementation of new normative information

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/06					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605803S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0003 DoD Enlistment Processing and Testing	1.739	1.712	1.819	1.826	1.919	1.916	1.905	Continuing	Continuing

FY 2001 Plans (1.819)

DoD Enlistment Testing Program (ETP) (1.091 million)

- Implement new normative score scale
- Implement new forms of the paper and pencil ASVAB for the enlisted testing program
- Complete MET site feasibility study
- Conduct validity studies of Assembling Objects
- Finalize new procedures for detection of item/test compromise and item parameter drift; develop procedures for multidimensional adaptive testing

DoD Student Testing Program (STP) (.728 million)

- Implement new career exploration program with new materials
- Implement new normative information and score scale for STP ASVAB
- Implement new normative information and score scale for the interest-finder
- Revise *Military Careers* to be compatible with the O*NET
- Complete work on STP high school participation rate and prediction of civilian job success

Exhibit R-2, RDT&E Budget Item Justification					Date: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE Defense Human Resources Activity: 0605014S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	0.000	47.499	26.797	4.976	4.976	4.968	4.960	Continuing	Continuing
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

A. Mission Description and Budget Item Justification (See Enclosures)

The Department of Defense Human Resources Activity (DoDHRA) is a DoD-wide Field Activity chartered to support the Under Secretary of Defense for Personnel and Readiness (USD(P&R)).

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	0.000	47.499	26.797	4.976	4.976	4.968	4.960	Continuing	Continuing
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

A. Mission Description and Budget Item Justification

0004 The Defense Integrated Military Human Resource System (DIMHRS), located in Budget Activity 6, will be a single, fully integrated military personnel and pay management system for all DOD Services and Components. The system will be capable of supporting integrated personnel and pay management on local databases, as well as updating headquarters and corporate level systems. The program will also support the functional areas of manpower and training/education. It will also significantly improve support to the Joint Staff and Unified Combatant Commanders by providing the capability to track personnel regardless of Service/Component in and around any location or theater of operation.

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	0.000	47.499	26.797	4.976	4.976	4.968	4.960	Continuing	Continuing
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

A. Mission Description and Budget Item Justification (Continued)

0005 The DoD Common Access Card (i.e., smart card) was directed by the Deputy Secretary of Defense in his memo of 10 November 1999, subject: Smart Card Adoption and Implementation. This card will be the Uniformed Services ID Card, the DoD civilian ID card, carry the PKI authentication token, and provide logical and physical access for all DoD active duty, Selected Reserve, National Guard, DoD civilian employees, and DoD contractors inside the firewall. Software must be developed to integrate the Local Registration Authority (LRA) function for PKI with the ID card function of the RAPIDS workstation; print appropriate information of the face of the card; and populate the chip. Additional software must be developed to integrate the Local Registration Authority (LRA) function for PKI with the ID card function of the RAPIDS workstation; print appropriate information on the face of the card; and populate the chip. Although the roll-out of this card will begin in FY01, given the compressed schedule as well as the significant advances in smart card technology each year, this card will continue to go through upgraded capabilities over the next several years.

Exhibit R-2, RDT&E Budget Item Justification					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
Total PE Cost	0.000	47.499	26.797	4.976	4.976	4.968	4.960	Continuing	Continuing
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

B. Program Change Summary

	FY99	FY00	FY01	Total Cost
Previous President's Budget	0	0.000	0.000	Continuing
Adjustments to Appropriated Value	0	+47.499*	+26.797*	
Current Budget Submit/President's Budget	0	47.499*	26.797*	Continuing

FY00 reflects +$41.2 million in congressionally added funds for the DIMHRS program (transferred from the O&M appropriation) minus $191 thousand in inflation savings; and +$6.490 for the Smart Card program. FY01 Reflects +$20.0 million in congressionally added funds for the DIMHRS program minus $114 thousand for inflation adjustments; and +$6.950 for the Smart Card program minus $39 thousand for inflation adjustments.

C. Other Program Funding Summary (N/A)

D. Schedule Profile

FY 1999 Accomplishments: None, Smart (Common Access Card) program not established until 10 November 1999.

								DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					**PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S**				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing

A. Mission Description & Budget Item Justification

DIMHRS will be a single, fully integrated military personnel and pay management system for all DOD Services and Components. The system will be capable of supporting integrated personnel and pay management on local databases, as well as updating headquarters and corporate level systems. The program will also support the functional areas of manpower and training/education. It will also significantly improve support to the Joint Staff and Unified Combatant Commanders by providing the capability to track personnel regardless of Service/Component in and around any location or theater of operation.

B. Program Change Summary

	FY99	FY00	FY01	TOTAL COST
Previous President's Budget	0	0	0	Continuing
Appropriation Conference Agreement	0	41.009*	19.886*	
Current President's Budget Submission	0	41.009*	19.886*	Continuing

FY 00 and beyond reflect a transfer of resources from the O&M, D-W appropriation in accordance with Congressional guidance. *FYs 00 and 01 reflect inflation adjustments.

C. Other Program Funding Summary **(N/A)**

								DATE: FEBRUARY 2000	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	**FY99**	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**COST TO COMPLETE**	**TOTAL COST**
0004 DoD Integrated Military Human Resource System	0.000	41.009	19.886	4.976	4.976	4.968	4.960	Continuing	Continuing

D. Schedule Profile

FY 1999 Accomplishments (N/A)

FY 2000 Plans (41.009)

- Development of systems architecture, operations architecture, and application architecture
- Human Resource COTS evaluation/selection
- Investment Management repository and processes
- Pilot demonstrating/testing the systems architecture for performance and scalability
- Migration Strategy
- Phase I activities/ products for MAIS ACAT 1A Program

FY 2001 Plans (19.886)

- Development of first useful segments (Incremental build)
- Continue Investment Management repository and process
- Continue Pilot demonstrating/testing the systems architecture for performance and scalability
- Completion Phase I activities/products for MAIS ACAT 1A Program

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 5	Program Element: 0605014S DEFENSE INTEGRATED MILITARY HUMAN RESOURCES SYSTEMS

A. Project Cost Breakdown
Development of the Defense Integrated Military Human Resources System (DIMHRS)

Project Cost Categories	FY 99	FY 00	FY 01
a. Systems Design and Development	0	41.009	19.886

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
Information Technology Center New Orleans Louisiana								
SEA	CPFF	Jan 2000	N/A		24.200	19.886	Continuing	Continuing
Various	CPFF				16.809			

Government Furnished Property N/A

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

A. Mission Description & Budget Item Justification

The DoD Common Access Card (i.e., smart card) was directed by the Deputy Secretary of Defense in his memo of 10 November 1999, subject: Smart Card Adoption and Implementation. This card will be the Uniformed Services ID Card, the DoD civilian ID card, carry the PKI authentication token, and provide logical and physical access for all DoD active duty, Selected Reserve, National Guard, DoD civilian employees, and DoD contractors inside the firewall. Software must be developed to integrate the Local Registration Authority (LRA) function for PKI with the ID card function of the RAPIDS workstation; print appropriate information of the face of the card; and populate the chip. Additional software must be developed to integrate the Local Registration Authority (LRA) function for PKI with the ID card function of the RAPIDS workstation; print appropriate information on the face of the card; and populate the chip. Although the roll-out of this card will begin in FY01, given the compressed schedule as well as the significant advances in smart card technology each year, this card will continue to go through upgraded capabilities over the next several years.

B. Program Change Summary

	FY99	FY00	FY01	Total Cost
Previous President's Budget	0	0	0	
Adjustments to Appropriated Value	0	+6.490	+6.911	
Current Budget Submit/President's Budget	0	6.490	6.911	13.401

C. Other Program Funding Summary (N/A)

D. Schedule Profile

FY 1999 Accomplishments: None, program not established until 10 November 1999.

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

FY 2000 Plans

- o Start-up, design, and development
- o Develop smart card military specific logic for active, Reserves and Guard to be integrated into RAPIDS
- o Integrate smart card logic in the RAPIDS deployable feature
- o Integrate the use of a fingerprint biometrics as the pin number for the smart card
- o Modify the DEERS database to hold new data values
- o Design and develop smart card civilian employee specific logic
- o Design the architecture of data storage chip
- o Test products of several smart card manufacturers for interoperability with existing hardware
- o Test different smart card printer and smart card readers with the various smart cards for interoperability
- o Integrate the PKI LRA function with the RAPIDS ID function

Exhibit R-2, RDT&E Budget Item Justification)					DATE: FEBRUARY 2000				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					PROGRAM ELEMENT (PE) NAME & NUMBER: Defense Human Resources Activity: 0605014S				
COST (In Millions)	FY99	FY00	FY01	FY02	FY03	FY04	FY05	COST TO COMPLETE	TOTAL COST
0005 Access Card Office	0.000	6.490	6.911	0.000	0.000	0.000	0.000	0.000	13.401

FY 2001 Plans

- o The card to be issued in FY01 will not meet the anticipated requirements of FY 02. However, the rate of technology growth should allow the use of a higher capacity card in FY 2002. Plans for FY 02 include building on the initial capability fielded in FY01 to take advantage of technological growth and meeting some of the lower priority requirements
- o Support the fielding of the DoD Common Access Card to RAPIDS sites around the world
- o Support the upgrade of both military and civilian ID card functions that could not be supported for the initial fielding
- o Support the upgrade of the PKI LRA/RAPIDS integration as PKI continues to define its requirements for Class 4 tokens
- o Design and develop the chip back-up feature that will handle connected user application sites and non-connected user application sites
- o Design and develop chip restore feature to allow a RAPIDS site to issue a new smart card and restore the data on the chip from the last back-up
- o Add additional modules for space and application allocation on the chip as approved by the Smart Card Configuration Management Control Board

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RTD&E, Defense-Wide/Budget Activity 5	Program Element: 0605014S DoD COMMON ACCESS CARD

A. Project Cost Breakdown
Access Card

Project Cost Categories	FY 99	FY 00	FY 01
a. Support Costs	0	6.490	6.911

B. Budget Acquisition History and Planning Information
Performing organizations

Contractor or Government Performing Activity	Contractor Method/Type Or Funding Vehicle	Award or Obligation Date	Performing Project Activity BAC	FY 99	FY 00	FY 01	Budget to Complete	Total Program
Sun Systems	FP/MIPR	12/00	GSA	0	6.490	6.911	0	13.401
EDS	CPFF/FF/MIPR	03/99-02/00	GSA					
SRA	FFP/MIPR	01/00	DSSW					
TRW	FFP/MIPR	02/00	GSA					
Driefus Assoc.	FFP/MIPR	01/99	Navy					
Entrust	FP/MIPR	09/99	GSA					
CSC	FP/MIPR	02/00	CECOM					
Novell	FFP/MIPR	02/00	GSA					

Government Furnished Property N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
Total PE Cost	7.741	9.775	5.048	5.082	5.155	5.254	5.313	Continuing	Continuing
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing
003 Commodity Management System Consolidation (CMSC)	2.968	4.900	------	------	------	------	------	0.0	7.868

A. Mission Description and Budget Item Justification: (See Enclosures)

B. Program Change Summary:

	FY99	FY00	FY01
President's Budget Submission	7.978	4.974	5.076
Adjustments to Appropriated Value:	-.237	+4.956	-.028
Congressional Rescission:		-.155	
Current Budget Submission:	7.741	9.775	5.048

Change Summary Explanation: FY 99 reflects -$237 thousand in undistributed congressional adjustments. FY 00 reflects -$155 thousand in government-wide rescissions,- $44 thousand for inflation adjustments, and +$5.0 million for CMSC, a congressionally added program. FY 01 reflects -$28 thousand for inflation.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing

A. Mission Description and Budget Item Justification:

This program element is found in Budget Authority 6, RDT&E Management Support, to provide engineering, scientific and analytical support to the Office of the Deputy Under Secretary of Defense (Science and Technology) (ODUSD(S&T)) in its responsibility for direction, overall quality, and content of the Science and Technology (S&T) program and ensuring that the technology being developed is affordable and minimizes system development risk. The primary purpose of program element is to facilitate the development of the S&T program and conduct assessments and analyses of the S&T program to ensure maximum utilization of Research and Development funds to accomplish the overall objectives of the S&T program. Funds are required for technical and analytical support, equipment, supplies, travel, and publications.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing

FY 1999 Accomplishments:

- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in developing strategies and plans to exploit and develop technology. (.280)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in conducting analyses, developing policies, making recommendations, and developing guidance for science and technology plans and programs. (1.164)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in reviewing proposed and approved science and technology programs and make recommendations to optimize effectiveness of the DoD investments in science and technology.(.628)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in oversight of the technological aspects of the Independent Research and Development and Small Business Innovative Research Programs. (.051)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in execution of special interest programs such as the University research programs including the University Research Initiative, the manufacturing science and technology program, and dual use and technology transition efforts. (1.838)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing

FY 2000 Plans:

- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in developing strategies and plans to exploit and develop technology. (.295)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in conducting analyses, developing policies, making recommendations, and developing guidance for science and technology plans and programs. (1.230)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in reviewing proposed and approved science and technology programs and make recommendations to optimize effectiveness of the DoD investments in science and technology. (.663)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in oversight of science and technology issues and initiatives and responding to Congressional special interests. (1.899)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing

FY 2001 Plans:

- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in developing strategies and plans to exploit and develop technology. (.303)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in conducting analyses, developing policies, making recommendations, and developing guidance for science and technology plans and programs. (1.262)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in reviewing proposed and approved science and technology programs and make recommendations to optimize effectiveness of the DoD investments in science and technology. (.681)
- Provide engineering, scientific, analytical, and managerial support to the ODUSD(S&T) in oversight of science and technology issues and initiatives and responding to Congressional special interests. (2.011)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06	Program Element: 0605798S Defense Technology Analysis

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
001 DOD Technology Analysis Office	3.961	4.087	4.257	4.298	4.380	4.486	4.558	Continuing	Continuing

B. Program Change Summary: Cost in Millions

	FY99	FY00	FY01
President's Budget Submission	3.990	4.170	4.281
Adjustments to Appropriated Value:	-.029	-.018	-.024
Congressional Rescission:		-.065	
Current Budget Submission:	3.961	4.087	4.257

Change Summary Explanation: FY 99 reflects -$29 thousand in undistributed congressional adjustments. FY 00 reflects -$65 thousand in government-wide rescissions, and -$18 thousand for inflation savings. FY 01 reflects -$24 thousand for inflation adjustments.

C. Other Program Summary Funding Summary: N/A

D. Schedule Profile:

	FY 99				FY 00				FY 01			
	1	2	3	4	1	2	3	4	1	2	3	4
Operations	.065	.175	.045	.045	.038	.130	.025	.025	.040	.130	.025	.025
S&T Support	.720	1.830	.990	.091	.615	2.327	.917	.010	.816	2.189	.992	.040

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing

A. Mission Description and Budget Justification

Technology Integration (TI) activities advance international science and technology (S&T) cooperation of specific projects of bilateral or multilateral interest. It provides the management support for U.S. participation in NATO's Research and Technology Organization (RTO) and "The Technical Cooperative Program" (TTCP). TI oversees, coordinates and reviews RTO and TTCP activities in which the U.S. has an interest including ongoing and proposed collaborative programs, technical symposia and conferences, and standard operating procedures. This Defense Reform Initiative-related effort will leverage Tri-Service S&T dollars through new and ongoing international partnerships. TI also provides selective funding support for administration, travel, conferences, and technical evaluations related to RTO activities carried out by the Services and other organizations.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing

FY 1999 Accomplishments:

- Foster international bilateral and multilateral cooperative agreements in high value science & technology areas with allies, nonaligned nations and former Soviet Block nations. Then establish data exchange agreements, engineer and scientist exchange program visits, international technology assessments and new cooperative programs. (.162)
- Identify specific and mutually advantageous cooperative projects in DOD technologies to Services and potential international partners. Examples of such include but are not limited to; systems, medical and biomedical science, infectious disease research, burn and hemorrhage care, and international telemedicine technology. (.350)
- Seek opportunities for international cooperation in high priority S&T. One such example is the worldwide interest in humanitarian demining technologies and safe removal of unexploded ordinance (UXO). Conduct intradepartmental coordination to achieve goals as necessary. (.200)
- Identify Service specific Defense Technology Objective (DTO) financial shortfalls. Then seek international partners willing to share technology, human and financial resources needed to achieve mutual objectives. (.100)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing

FY 2000 Plans:

- Foster international bilateral and multilateral cooperative agreements in high value science & technology areas with allies, nonaligned nations and former Soviet Block nations. Then establish data exchange agreements, engineer and scientist exchange program visits, international technology assessments and new cooperative programs. (.154)
- Identify specific and mutually advantageous cooperative projects in DOD technologies to Services and potential international partners. Examples of such include but are not limited to; systems, medical and biomedical science, infectious disease research, burn and hemorrhage care, and international telemedicine technology. (.350)
- Seek opportunities for international cooperation in high priority S&T. One such example is the worldwide interest in humanitarian demining technologies and safe removal of unexploded ordinance (UXO). Conduct intradepartmental coordination to achieve goals as necessary. (.184)
- Identify Service specific Defense Technology Objective (DTO) financial shortfalls. Then seek international partners willing to share technology, human and financial resources needed to achieve mutual objectives. (.100)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing

FY 2001 Plans:

- Through an international technology watch effort, identify ongoing and proposed S&T efforts that could complement efforts or fill shortfalls in meeting U.S. S&T requirements, objectives and goals. (.400)
- Foster international bilateral and multilateral cooperative agreements in high value science & technology areas with allies, nonaligned nations and former Soviet Block nations. Then establish data exchange agreements, engineer and scientist exchange program visits, international technology assessments and new cooperative programs. (.150)
- Seek opportunities for international cooperation in high priority S&T. Conduct intradepartmental coordination to achieve goals as necessary. (.241)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06	Program Element: 0605798S Defense Technology Analysis

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
002 Technology Integration	0.812	0.788	0.791	0.784	0.775	0.768	0.755	Continuing	Continuing

B. Program Change Summary

	FY 99	FY00	FY01
Previous President's Budget	0.997	0.804	0.795
Adjustments to Appropriated Value	-0.185	-.003	-.004
Congressional Rescission		-.013	
Current Submit/President's Budget	0.812	0.788	0.791

Change Summary Explanation: FY 99 reflects -$7 thousand for undistributed congressional -$178 thousand to fund other priorities elsewhere within the Department. FY 00 reflects -$13 thousand in government-wide rescissions and -$3 thousand for inflation savings. FY 01 reflects -$4 thousand for inflation adjustments.

C. Other Program Funding Summary N/A

D. Schedule Profile:

	FY 99				FY 00				FY 01			
	1	2	3	4	1	2	3	4	1	2	3	4
Operations	.020	.050	.050	.050	.008	.015	.015	.015	.010	.015	.015	.015
Support	.200	.312	.100	.030	.330	.291	.100	.014	.340	.281	.100	.015

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE: FEBRUARY 2000
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06	Program Element: 0605798S Defense Technology Analysis

COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
003 CMSC	2.968	4.900	------	------	------	------	------	0.0	7.868

A. Mission Description and Budget Justification

FY 99 Commodity Management System Consolidation

The Commodity Management System Consolidation (CMSC) and Integration team is charged with transitioning Commodity Systems to support the DoD Logistics 2010 Vision. This plan includes reducing response time, operational costs, inventory and enhances customer satisfaction. To support this, the existing commodity management systems, in use by the Defense Logistics Agency (DLA), must be migrated to a common operating environment which utilizes shared data, business rules, and global data management.

Consolidation and integration of all the commodity management systems used by the DLA is a large-scale effort. In order to manage program risk, the migration strategy must be designed to include a series of manageable successes which combine incremental development, testing and fielding manageable subsets of the databases of legacy systems. This build a little, test a little approach assists DLA in early identification of risks of technology changes, staff turnovers, and of business process changes, and will provide management information to migrate those risks effectively and with a minimum of effort. It also improves the flexibility of the overall migration effort. Structurally, project flexibility will allow DLA to reprioritize portions of the migration effort to resolve critical issues:

This program reflects a congressional add in FY 1999.

B. Program Change Summary

	FY 99	FY 00	FY 01	Total Cost
Previous Presidents Budget	2.991	--------	--------	2.991
Adjustments to Appropriated Value	-.023	+4.900**	--------	--------
Current Budget Submit/Presidents Budget	2.968*	4.900**	--------	7.868

*Reflects - $23 thousand per congressional undistributed reduction

**Reflects -$77 thousand for government-wide rescission and -$23 thousand for inflation savings.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE: FEBRUARY 2000						
APPROPRIATION/BUDGET ACTIVITY: RDT&E, Defense-Wide/Budget 0400/06			Program Element: 0605798S Defense Technology Analysis						
COST (MILLIONS)	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	COST TO COMP	TOTAL
003 CMSC	2.968	4.900	------	------	------	------	------	0.0	7.868

C. Other Program Funding Summary: N/A

D. Schedule Profile

Commodity Management System Consolidation

	FY 99				FY 00				FY 01			
	1	2	3	4	1	2	3	4	1	2	3	4
Phase II - Interface with interactive materiel management databases	X	X			X	X	X	X				

FY 2001 BIENNIAL BUDGET REVIEW
ADVISORY AND ASSISTANCE SERVICES
DEFENSE LOGISTICS AGENCY
(Dollars in Thousands)

	FY 99 Actual	FY 00 Estimate	FY 01 Estimate
Appropriation: RDT&E,DW			
I. Management & Professional Support Services			
FFRDC Work			
Non-FFRDC Work			
Subtotal			
II. Studies, Analysis, & Evaluation			
FFRDC Work	2,109	300	0
Non-FFRDC Work			
Subtotal	2,109	300	0
III. Engineering & Technical Services			
FFRDC Work			
Non-FFRDC Work			
Subtotal			
TOTAL			
FFRDC Work	2,109	300	0
Non-FFRDC Work			

Defense Logistics Agency
Research, Development, Test and Evaluation,Defense Agencies

Contract Reporting by Appropriation

		FY 1999 Actual			FY 2000 Estimate			FY 2001 Estimate		
Appn		Total Contracts	Other Services Contracts	% of Total Contracts	Total Contracts	Other Services Contracts	% of Total Contracts	Total Contracts	Other Services Contracts	% of Total Contracts
0400	D R	68,912	0		101,446	0		88,236	0	