

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 1999		
APPROPRIATION/BUDGET ACTIVITY Research, Development, Test & Evaluation, Defense-wide					R-1 ITEM NOMENCLATURE Technical Studies, Support & Analysis PE 0605104D				
COST (In Millions)	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	
Total Program Element (PE) Cost	30.592	29.641	29.506	30.016	30.459	30.870	31.517	32.180	
P421 Tech Studies, Support & Analysis	30.592	29.641	29.506	30.016	30.459	30.870	31.517	32.180	

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT: This program element is classified in Budget Activity 6 because it is the primary source of funding for the Office of the Secretary of Defense and the Joint Staff for studies, analyses, management, and technical support efforts to improve and support policy development, decision-making, management and administration of DoD programs and activities. Specific projects address a variety of complex issues and dynamic problems facing the Under Secretary of Defense for Acquisition and Technology [USD(A&T)], Under Secretary of Defense for Policy [USD(P)], Under Secretary of Defense for Personnel and Readiness [USD(P&R)], Assistant Secretary of Defense for Command, Control, Communications and Intelligence [ASD(C3I)], Director for Program Analysis and Evaluation (DPA&E), the Joint Staff and Unified Command Commanders. Studies and analyses will examine the implications and consequences of current and alternative policies, plans, operations, strategies and budgets, and are essential for understanding and gaining insight into the complex multifaceted international, political, technological, economic, military, and acquisition environments in which defense decisions and opportunities take place. With the defense budget declining and our need to better understand and cope with the threats and uncertainties facing the Nation in the current economic environment, the need for objective analyses and forward-looking planning for the immediate through the long-range becomes greater.

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PROGRAM ACCOMPLISHMENTS AND PLANS:**General Support for USD(ACQUISITION & TECHNOLOGY):****FY1998 Accomplishments**

- Developed prototype training tool to advance Program Manager's knowledge of PPBS and programmers' and budgeters' knowledge of the acquisition system
- Developed lessons learned regarding processes used in first Quadrennial Defense Review (QDR), offered options for improving such processes in future reviews of this kind, and provided initial proposals for acquiring assessment capabilities that benefit DoD in the next QDR.
- Supported National Partnership for Reinventing Government (NPR) goal of providing visibility into weapon systems life cycle cost by providing a basis for estimating costs of future systems.
- Supported National Performance Review goal of defining requirements and establishing a cost accounting system that provides routine visibility into weapon system life-cycle costs through activity based costing and management.
- Spin-off research required after the cost and operational effectiveness assessments of deep attack weapons mix
- Analyses of technical issues affecting the relative performance of ballistic and cruise missile defense systems.
- Independent assessment of the Navy's Surface Ship Torpedo Defense program at the request of Congress.
- Analysis and planning for clearance of anti-personnel land mines and unexploded ordnance
- Assessments of schedule and technical risks associated with tactical aircraft and missile programs in preparation for acquisition milestone meetings.
- Analysis of cost and schedule impacts of applying stealth technology to tactical aircraft and other systems.
- Developed automated Purchase Request, as a prototype initiative for Paperless Contracting
- Benchmarking, analysis and modeling of private and public sector career development, continuing education, and professional certification programs to support the design of a comprehensive continuous learning policy and program for the defense acquisition workforce.

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- Development and application of an analytical model and resulting recommendations for determining Defense Acquisition University core requirements and faculty structure for policy-level application and decision-making.
- Currently updating the Congressional mandated Joint Warfighting Science and Technology Plan for year 1999 and the companion science and technology planning documents.
- Currently conducting affordability activities with industry.
- Development of acquisition workforce decision support system specifications, including a data model, function flow diagrams, and prototype screen designs.
- Collected and conformed DoD-wide position and organization data to algorithm developed for analysis of individual position designations.
- Assessed feasibility of using recent technology advances in browser-based information technology to improve OUSD (A&T) information access and management.
- Determined environmental costs associated with weapon systems' life cycles.
- Reviewed and recommended a process for scrapping marine vessels in an environmentally prudent manner.
- Performed analysis of European Industrial Strategies, Cooperative Programs and Possible U.S. responses/ICOG
- Initiated the development and maintenance of International MOU Data Base for use by OSD, all Services and Components
- Support for the International Cooperative Research and Development (Nunn) process
- Developed Defense Modeling and Simulation Initiative with the Republic of Korea
- Developed Integrated Product and Process (IPPD) handbook and training, risk and software policy in DoD 5000.2-R, and risk and software practices in the Acquisition Deskbook.

FY 1999 Program

- Program Schedule and Cost Risk Assessment for the Assembled Chemical Weapons Assessment (ACWA)
- Examining the Implications of Transatlantic Industrial Cooperation
- Examining Leasing and Other Alternative Uses of Non-Excess Military Property

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- Laboratory Restructuring & Consolidation: an independent analysis of functions and costs at all Defense labs, toward possible re-engineering
- Cost Benefit Analysis of Raising Micro Purchase Card Threshold, especially as it impacts small and minority-owned businesses
- Attack Submarine Force Structure Study
- Working Capital Funds Reform
- Property, Plant and Equipment Accountability - Analysis and Scope of New Mission
- Co-sponsor a multi-Federal Agency effort, underwriting an initiative to assess the European air transport industry
- Design, develop, and apply optimization technology techniques for improving long range planning of defense acquisitions in areas found most promising.
- Improve the overall management of Defense contracts by integrating earned value management with technical accomplishments. Determine key technical performance parameters for a contract, map them to the Work Breakdown Structure elements, and assess cost and schedule.
- Support the Deputy Secretary's goal of paperless operations by obtaining the planning and analysis needed to support paperless processing of FY00 Program Objective Memorandum.
- Support National Partnership for Reinventing Government (NPR) goal of reducing cycle time by 25 percent.
- Advance acquisition workforce staff understanding of PPBS by developing simulation/game teaching tools
- Continue analysis of cost-effectiveness of incorporating stealth technologies into aircraft, unmanned systems, and certain classes of weapons.
- Analyses of Theater and National Missile Defense requirements, including technology and system performance issues related to development and use of laser systems for missile defense
- Address issues affecting relative performance of deep attack systems, including modeling system survivability at low altitudes.
- Respond to Congressional direction to analyze requirements for reactive armor tiles.
- Update the Congressional mandated Joint Warfighting Science and Technology Plan for year 2000
- Planning affordability activities with industry
- Recruit, develop, reward and retain technology leaders

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- Conduct strategic planning and implementation support for cross-service restructuring of laboratories
- Provide senior consultant to laboratory legislative issues
- Implement metrics for dual use science & technology programs
- Continue refinement of prototype design, methodology, and analytical plan to validate the business necessity of academic degrees for acquisition professionals by career field clusters.
- Full deployment of an acquisition workforce decision support system which integrates all military and civilian personnel, position, and organization data for convenient, desk-top use by acquisition functional managers and department leaders.
- Completion of a system of metrics linking career program features, as well as education and training, to functional (performance) outcomes to support workforce management and program design decisions.
- Identification of additional education and training requirements resulting from re-identification of acquisition workforce under the refined Packard model, and develop alternative implementation strategies.
- Develop Web-based automated Purchase Request, in support of Paperless Contracting goals
- Conduct two Program Executive Officer/System Commander Conferences
- Develop a methodology to reduce military impacts on the environment through implementation of the International Standards Organization (ISO) 14000 "Environmental Management Programs" standard.
- Develop strategy for military-to-military environmental cooperation with the People's Liberation Army of China.
- C4SI Interoperability between US and Republic of Korea (ROK)
- Russian/Former Soviet Union Cooperative Efforts Analysis
- Document the International Cooperative Research and Development process
- Support for the International Cooperative Research and Development (Nunn) process
- Analytic Support: International Armaments Cooperative Programmatic, Industrial and Politico-Military Initiatives
- Analytic Support for International Cooperative Opportunities (ICOG) Development

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- Development and maintenance of International MOU Data Base for use by OSD, all Services and Components
- Continue development and implementation of systems engineering, simulation, software policy, best practices, and procedures as initiatives assigned by the Defense Systems Affordability Council to the Systems Engineering Steering Group.
- Integrate the Software, Systems Engineering and Integrated Product/Process Development (IPPD) Capability Maturity Models.

FY2000 Plans

- Remain cognizant of latest management techniques that could be applied to DoD's weapons systems process and determine best way to apply them.
- Find or develop tools to support the paperless office initiative, to protect the information infrastructure, to simplify using the PPBS, and to optimize resource allocation.
- Analyze weapon systems performance, cost, and schedule issues to support acquisition milestone decisions and DoD planning, programming, and budgeting activities.
- Respond to Congressional direction to evaluate weapon systems requirements and acquisition issues, and to submit master planning documents for key defense mission areas.
- Continue implementation, tracking, and metrics of acquisition reform initiatives-the heart of Revolution in Business Affairs needed to help pay for Revolution in Military Affairs.
- Finalize a strategy to minimize DoD's greenhouse gas emissions to minimize global climate change.
- Finalize a plan to incorporate environmental justice into DoD programs, policies, and activities.
- Initiatives from the Defense Systems Affordability Council in Systems Engineering functional areas.
- Annual update of the Congressional mandated Joint Warfighting Science and Technology Plan for 2000 and the companion science and technology planning documents.
- Depending on annual funding for the above list, the remainder will stay active until completion.

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FY2001 Plans

- Analyze weapon systems performance, cost, and schedule issues in support of acquisition milestone decisions and DoD planning, programming, and budgeting activities.
- Respond to Congressional direction to evaluate weapon systems requirements and acquisition issues, and to submit master planning documents for key defense mission areas.
- Continue implementation, tracking, and metrics of acquisition reform initiatives - the heart of the Revolution in Business Affairs needed to help pay for the Revolution in Military Affairs.
- Finalize unexploded ordnance detection and neutralization strategies.
- Finalize environmental security modeling and simulation of operational and technological systems.

General Support for USD (POLICY)**FY 1998 Accomplishments:**

- Analyzed operational and strategic implications of specific issues related to the use of biological weapons and the threats they pose in a variety of regional contingencies
- Analyzed specific dimensions of the threats posed by the use of weapons of mass destruction, and how best to deter that threat.
- Analyzed threat from radiological dispersion devices, how those weapons might be used against U.S. forces, and how the U.S. might best respond
- Analyzed threat from biological terrorism, helped develop appropriate response mechanisms
- Identify and assess novel options that may be exploited by regional states for delivery of nuclear, chemical, and biological weapons.
- Analyzed nuclear weapon employment, supporting force/operational issues, and U.S. missile defense. Analyzed the relationships between missile defense, deterrence policy and counterproliferation efforts.
- Continued the development of analytical tools to better understand theater, component, and operational suppression of enemy air defense systems and battlefield operations.

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- Develop and assess alternative approaches to conducting major theater wars
 - Continued development of computer gaming capability based on warfare simulation methodology designed to model effects of modern forces in nontraditional engagements.
 - Initiated the development of a comprehensive net assessment of space capabilities.
 - Developed plans for the OSD continuity of operations program. Conducted a series of exercises, which focused on specific problem areas. Developed a plan of action for improving continuity of operations policy and planning
 - Continued development of indicators/methodologies to help assess US/allied capabilities and US/allied performance toward meeting force improvement objectives. Analyzed selected burden-sharing indicators between NATO allies and others worldwide
 - Analyzed U.S. policy in the Balkans with a view toward identifying ways the U.S. could, in concert with its allies, promote greater regional stability and cooperation, as well as strengthen defense cooperation.
- Initiated analysis of logistics requirements needed to support new NATO missions and force structures

FY 1999 Plans:

- Continue the development of an African Center for Security Studies
- Analyze options for a sustainable long-term presence in the Asia Pacific region
- Develop a better understanding of Taiwan's evolving defense requirements in accordance with the Taiwan Relations Act
- Identify and evaluate priority measures that the US could take to maintain Alliance military effectiveness, with emphasis on interoperability and defense cooperation
- Develop long-term strategic framework in which force plans of new Allies can be evaluated and programs of military assistance can be prioritized
- Continue the analysis of logistics requirements needed to support new NATO missions and force structures

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- Identify ways to encourage the development of civilian defense expertise in Latin America and the Caribbean
- Continue work on biological terrorism and the role of the DoD in crisis response and consequence management
- Continue work on threats to military operations in chemical/biological environment
- Continue work on the joint suppression of enemy air defense (JSEAD)
- Explore alternative approaches and concepts for engaging Russia.
- Analyze a range of compellant strategies, with particular but not exclusive attention to the military dimension, drawing implications for U.S. strategy and force posture
- Conclude study of effectiveness of humanitarian airdrops initiated in FY 1998
- Analyze and explain DoD's strategy for countering terrorism, including the use of weapons of mass destruction on U.S. soil.
- Continue the implementation of the Interagency Terrorism Response Awareness Program to enhance our approaches for dealing with terrorism.
- Provide quick turnaround analyses in response to regional contingencies and emerging international crises

FY 2000 Plans

- Continue to conduct regionally-focused studies on critical issues of concern to the department at that time. For example, China's continued growth as a regional military power raises issues concerning appropriate U.S. approaches and responses
- Continue to collect, analyze, and update statistics on a wide range of macroeconomic and defense indicators used for responsibility sharing comparisons among NATO nations, Japan and the Republic of Korea
- Analyze the threat posed by the proliferation of weapons of mass destruction and the impact on U.S. force structure, acquisition, logistics, training, and doctrine
- Continue assessments of the implications of the Revolution in Military Affairs and how new and emerging technologies might best be exploited to enhance combat effectiveness.

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- Continue development of a comprehensive net assessment of space capabilities.
- Assess implementation of nuclear employment policy guidance and examine critical policy issues involved with national and theater ballistic missile defense
- Continue investigating new operational concepts that existing US forces might use in conjunction with active and passive defense measures to mitigate the threat from enemy "anti-access" capabilities.
- Continue efforts in the area of modeling and simulation of future warfare in support of the QDR (Quadrennial Defense Review).
- Continue the assessment of asymmetric threats to U.S. security interests and help develop alternative U.S. strategies in accordance with the QDR.
- Examine alternate force structures, budget and strategy in support of the next (QDR).

FY 2001 Plans:

- Continue analysis of nuclear weapon employment policy and the relationship between missile defense, counterproliferation policy and counterproliferation policy.
- Continue to analyze the threat posed by proliferation of weapons of mass destruction and the impact on U.S. force structure, acquisition, logistics, training, and doctrine
- Continue assessments of the implications of the Revolution in Military Affairs and how new and emerging technologies might best be exploited to enhance combat effectiveness.
- Continue work on asymmetric threats and challenges and related follow-on issues raised by the QDR
- Continue the development of ideas and concepts for "transforming the force," as determined by the Quadrennial Defense Review. The goal would be a force structure better organized and equipped to deal with emerging threats and challenges.
- Continue work on development of anti-access approaches and methodologies as determined by the Quadrennial Defense Review

General Support for the USD (Personnel & Readiness)

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FY 1998 Accomplishments:Military Personnel Policy

- Congressional mandate: Investigated aviation pay authorities, explored alternative means of compensation and retention of aviators, and currently developing legislative recommendations.
- Congressional mandate: Examined effects of occupation consolidation and elimination (used to generate savings during the drawdown) on skill shortages/overall readiness.
- Evaluated the effectiveness of civilian-contracted telemarketing as a "tool" to enhance recruiting, and continue to examine the cost effectiveness of alternative mixes of national and local advertising.
- Developed innovative strategies to explore new markets to enhance recruiting: attracting college-bound youth into the military.
- Completed evaluation of JROTC Career Academy Program, which provides special military instruction and academic/ vocational training for "at-risk" high school students.
- Demonstrated importance of personnel support programs for military service members and families.
- Determined the impact of alternative retirement plans on civilian manpower supply.

FY 1999 Plans:Military Personnel Policy

- Continue to develop analytic tools to examine ways in which the military pay system and non-pecuniary factors (quality of life, promotion policies, etc.) affect overall recruiting and retention, and determine the most cost-effective mix of compensation and personnel policies to meet force strength objectives.
- Develop a model of recruiting for the Selected Reserves.
- Determine the impact of special duty assignment pay on difficult-to-fill and critical occupational specialties.
- Evaluate privatization of military recruiting.

Personnel and Family Support

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- Continue to assess the impact of MWR and other quality of life programs on military families, with special emphasis on the effects of major QoL programs on retention, satisfaction with military life, and spouse employment.
- Continue to devise a cost-effective DoD civilian manpower plan in the drawdown, as budgets are constrained and military force levels decline.
Reserve Force Utilization
- Continue to develop and evaluate alternative policies to foster more effective Active/Reserve Force integration.
- Continue to examine individual skill qualifications within the Reserve Component.
- Prepare to conduct a Reserve Component survey on readiness, Quality of Life, family issues, and attitudes of Service members and spouses toward military life.
Military Health Policy
- Examine the future of the Military Health System in terms of its competitiveness with civilian benefits.
- Develop a methodology to determine the value of the medical health benefit.
Equal Opportunity Policy
- Congressional mandate: Develop a survey that identifies and tracks sexual harassment in the military.

FY 2000-2001 Plans:

- Explore new concepts and develop analytical tools to measure personnel and unit readiness for Active and Reserve Components.
- Develop methods to improve the determination of total force requirements for manpower.
- Improve the technological capability of personnel systems to acquire, distribute, train, and utilize qualified personnel for Active and Reserve forces
- Evaluate alternatives for managing total force manpower.
- Monitor quality of life, equal opportunity and diversity of the force.
- Address congressional mandates and directives.

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General Support to Director, Program Analysis & Evaluation

FY 1998 Accomplishments:

Part I. Current Agenda Issues:

Infrastructure

- Examined steps needed to reap planned savings and whether expected savings will continue over time.
- Reviewed distribution and location of DoD family housing, and categorized housing based on availability and cost of private sector housing.
- Evaluated types of training for which organizational and procedural changes, such as outsourcing, appear most promising.
- Developed method and model to estimate size of theater stockpile: resupply ammunition.

Implementing QDR Strategy

- Analyzed AF and Navy tactical aircraft and weapons modernization.
- Reexamined amphibious lift requirements in context of 2 MTW requirements and impact of other factors of lift.
- Analyzed key international resource issues--NATO enlargement and allied burden sharing.
- Developed analytic foundation for examining opportunities and challenges from operating with non-U.S. military organizations in future SSCs.
- Refined cost methodologies and data for use in updating initial DoD cost of NATO enlargement.
- Developed methodologies for estimating marginal costs of contingencies and options for managing those resources.

Personnel, Readiness, and Quality of Life

- Assessed balance between Army structure and manning. Assessed readiness and warfighting impacts of personnel turmoil.
- Developed methodologies for estimating marginal costs of contingencies and options for managing those resources.

Supporting QDR Modernization Approach

- Expanded models for tracking aging of equipment.

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- Assessed capabilities and limitations of potential replacement interdiction aircraft.
- Analyzed impact of Army "digitization."
- Upgraded SSADM model to reflect future joint "netted" air defense operations.
- Analyzed cost-effectiveness of ICH program. Focused on predicted O&S cost savings.
- Explored cost-effectiveness of service life extension options for F-16 and A-10.
- Performed independent assessments of technical concepts and designs for satellite, reconnaissance, theater missile defense, and national missile defense systems.
- Determined overall cost-effectiveness of SOCOM naval craft modernization program.

Part II. Development of Analytic Capabilities

Cost Analysis Research & Tools

- Implemented FSC system for use as a cost-estimating tool for evaluating proposed changes to forces and the support infrastructure.
- Developed cost estimating tools relevant to attributes of next generation tactical aircraft including low observable advanced materials, integrated avionics, and unique propulsion designs.
- Reviewed best practices in estimating costs for large-scale product developments.
- Expanded personnel model to include warrant officers, integrate with officer and enlisted models, and assessed implications of inventory changes.
- Updated SARs database and addressed current policy issues.
- Developed understanding of implications of advanced materials/processes.
- Developed cost estimating relationships for streamlined manufacturing environment.
- Improved reporting of actual costs incurred in development of software for advanced weapon systems.
- Reexamined how DoD cost community estimates support labor costs.
- Developed parametric estimates based on historical engine components and experience from current technology.
- Updated database of overhead costs of defense contractors.
- Quantified cost savings of product initiatives from acquisition reform.

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- Supported economic analysis for major automated information systems.
- Improved ability to assess feasibility and risk of information program assumptions on which estimates of lifecycle costs and benefits are based.
- Developed methodologies for estimating marginal costs of contingencies and options for managing those resources.
Effectiveness Analytical Capabilities & Tools
- Developed capital stock and capabilities metrics to support DPP.
- Provided insights on ways to mitigate problems.
- Examined full spectrum of air defense operations involving aircraft, cruise missiles, and TMD threats.
- Continued improvements to JICM.
- Developed representations of C4ISR and WMD in JWARS.
- Developed recommendations regarding warfare representations using expertise from other theater-level simulations.
- Supported defense analysis professional forum.
- Continued preparations for the next QDR.

FY 1999 Plans:

Part I. Current Agenda Issues:

Infrastructure

- Maintain AIS EA database and continue development "Cost Pro" relational data base model. Train and assist DoD components, and provide analytical support for the assessment of AIS program benefit/cost risk.
- Improve ability to evaluate program assumptions in areas related to software. Improve ability to evaluate costs and benefits of software development programs and strategies.
Implementing QDR Strategy
- Examine the relationship between airfield infrastructure and airlift throughput; identify and rank infrastructure investments for several lift scenarios.

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- Continued development of a comprehensive set of capabilities metrics for incorporation into the DPP materials used to provide DoD senior leadership with an overview of the long term trends and "health" of the defense program.
- Conduct systematic study across most Army munitions of requirements, approved acquisition objectives, approved procurement objectives, wartime expenditures, training requirements, inventories, and budgets since the Cold War. This will compliment a PRG-directed study on Army's CBMR process and results.
- Update and extend past efforts to increase understanding and ability to program medical program resources as effectively as possible.
Personnel, Readiness, and Quality of Life
- Analyze both requirement and adequacy of funding for non-major procurement items particularly those contributing to individual soldier support and correlation to enhanced readiness, quality of life, retention, and recruitment. Determine whether focus on major procurement has shortchanged non-major procurement.
Supporting QDR Modernization Approach
- Continue development of an existing fast running model of the Army Internet, provide a necessary parametric tool, and apply it to project messaging rates and other basic figures of merit expected of the future Army tactical internet.
- Review radar technologies to meet future shipboard air defense needs. Develop transition plan for implementing acquisition for next generation radars. Analyze radar configurations of ship classes, alternatives to shipboard radars, and adequacy of the navy's acquisition plans for next-generation shipboard air defense radars.
- Develop a methodology for combining different means of enhancing aircraft survivability through common measures of performance and effectiveness. Expand current aircraft survivability methodology to include a more detailed treatment of lethal SEAD and air-to-air engagements.
- Develop additional infrastructure cost modules to Force and Support Cost (FSC) System.
- Provide analytical foundation for a cost-effective allocation of resources among space, missile defense, and reconnaissance systems.
Congressional Mandates

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- Provide senior leaders with key analyses to aid in resource allocation decisions and enhance defense planners ability to make most effective use of scarce collective defense resources. *A number of reports are mandated each year by the Congress, for which PA&E have responsibility for preparation, including the annual responsibility sharing report.*

Part II. Development of Analytic Capabilities

Cost Analysis Research & Tools

- Improve quality/scope of VAMOSC data to capture life cycle costs of major weapon systems.
- Develop metrics to better measure outputs of various business areas in the Defense Working Capital Funds.
- Provide complete database of all DoD-sponsored cost-related research.
- Improve reporting of actual costs for software projects associated with major weapon systems.
- Develop DoD "Best Practices" for estimating costs of new development programs in key product sectors.
- Modernize and improve efficiency of the Department's cost estimating process to support PPBS and acquisition process for major defense acquisition programs.
- Provide necessary data to address policy issues related to the magnitude, sources, and characteristics of cost growth and schedule growth.
- Improve cost models and estimating methodologies by exploring new ways of constructing learning curves (or cost improvement curves) to forecast expected cost of new systems.
- Improve PA&E's ability to evaluate program assumptions in areas related to software. Improve ability to evaluate costs and benefits of software development programs and strategies.
- Provide ready access to expert up-to-date research and consultative services in the areas of information technology and information assurance.

Effectiveness Analysis Tools

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- Analyze Army's non-TBMD ground based air defense structure in light of actual threats faced in post Cold War environment. Develop and evaluate possible changes in force structure, force component, and acquisition strategies.
- Enhance the functionality, utility, and credibility of JWARS theater-level warfare simulation, which is to be used in the upcoming QDR.
- Examine and develop selected critical air defense factors including sensor resource management, sensor data quality, data fusion, and information latency. Derive proper translation of the impact of these factors into the existing SSADM model. Examine contribution/added-value of new systems and concepts (AADC and JCTN) to the outcome of ship AAW defense engagements.
- Analyze the DWCF programming process for ordering goods and services and the accounting system for those expenditures.
 - Planning, Programming, and Budgeting System (PPBS)
- Support defense analysis professional forum.
- Improve the FYDP to enhance its value to DoD decision-makers.
 - Other Analytic Support Activities
- Reestimate translator vectors to improve accuracy of Defense Employment and Purchases Projection System (DEPPS) projections of DoD spending.
- Sponsor symposium for DoD cost research activities among OSD, the military services, and defense agencies.
 - Anticipating Future Analytic Requirements
- Provide basic handbook for use by DoD cost analysis and acquisition communities for consideration of cost reduction initiatives undertaken by defense contractors.
- Collect, analyze, exploit latest available information to develop databases and methods for estimating development/production costs of next generation tactical aircraft.
- Provide a detailed assessment of defense aircraft industry in accordance with "lean" manufacturing concepts and processes.
- Develop a methodology for identifying military forces needed for a variety of smaller scale contingencies (SSCs) and alternatives to the use of U.S. military units in SSCs.

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Part III. Anticipating Future Analytic Issues

- Continue preparations for the next QDR.

FY 2000/2001 Plans: Evaluate readiness, quality of life, modernization, and infrastructure issues, critical in a downsized military, and, as related to the Quadrennial Defense Review, outsourcing, lean logistics, and maintaining forces (active and reserve). Study long-term investment requirements, equipment aging trends, and the revolution in military affairs. Examine future security challenges, regional assessments, weapons proliferation, and global defense threats in view of the changing world scene. Build/capitalize upon effectiveness tools such as theater models or other capability analyses to look at incremental costs, effectiveness, and relative contribution of planned acquisitions. Continue FYDP reform efforts. Provide tools essential for analyzing and supporting the acquisition process; continue cost analyses of the military medical delivery system; conduct independent cost and operational effectiveness of planned weapons systems; and improve techniques to better understand and project DoD infrastructure and requirements. Continue Congressionally mandated efforts. FY2000 is a critically important period for preparing data, analyses, and tools for supporting the next QDR 2001, which will require significant analyses in all of the above areas.

General Support for ASD (C3I)

FY 1998 Accomplishments:

- Planned and conducted IW exercise with the British in June 98.
- Provided technical advice and consultation to Director, C-E Division and Defense Advisor, U.S. Mission to NATO on NATO Information Systems, NATO C3 Architecture and Implementation Plan, Partnership for Peace initiatives and other selected program areas
- Represented the U.S./participated in a broad range of NATO C3 policy, architecture planning, standardization and implementation activities in various NATO C3 fora and associated technical working groups

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- Contributed as the U.S. technical expert to the multi-national ADP working group dealing with technical review of NATO funded Automated Information Systems (AIS) and MIS projects, as well as the O&M support to existing AIS infrastructure
- Contributed as a U.S. technical expert to European Atlantic Partnership Council (EAPC) activities regarding C3 Matters Foreign Cooperation Analysis and Assessment
- MOU on Launch Site Operations
- DoD/NASA Cooperation Initiative
- GPS Resource Analysis and Track
- Developed a framework for CI and related areas of security that ties together: (1) the primary protection missions (2) Core functional capabilities within CI and security (3) resources associated with the security functions.
- Updated previous estimates of security resources for the years FY 1991-2003 consistent with Defense programming and budgeting structures and OMB Circular A-11.
- Developed proposals for reflecting the resource implications of potential security policy changes in the area of Force Protection and Antiterrorism.
- Proposed a methodology that can be used by the Defense components to conduct mission area analyses of their CI and security functions using the prescribed framework

FY1999 Plans:

- GPS NAVWAR Technical Assessment
- Extensive Space Control Analysis and Assessment
- Space Launch Infrastructure Assessment
- Commercial Space Launch Services Analysis and Assessment
- Satellite Control Architecture Assessment
- Commercial Spaceport Assessment and Coordination
- Analysis and Assessment of FAA Flight Vehicle Certification Cases
- Support to Civil and Commercial Cooperation Initiatives
- Support to Space Systems Acquisition and Review

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- Support to GPS Systems and Resources Issues
- Work NATO Enlargement technical issues, with particular focus on new accession Nations: Poland, Hungary, Czech Republic
- Provide technical support for the development of the NATO C3 Common Operating Environment (COE)
- Provide technical support for the NATO ACE ACCIS Implementation Plan
- Provide technical support for the Rolling Interoperability Program (RIP)
- Provide technical guidance on development of the NC3 Technical Architecture
- Participate in Working Group of National Technical Experts-ADP
- Participate in the NATO Open Standards Working Group (NOSWG)
- Update the current estimate of DoD security resources for FY 1997-FY 2005,
- Develop a conceptual framework for security and counterintelligence to structure management decisions to reduce risk in the areas of force protection, classified and sensitive information protection, and critical infrastructure protection.

FY2000 Plans:

- GPS Modernization and NAVWAR Technical Support
- Extensive Space Control Analysis and Assessment
- Space Launch Infrastructure Assessment
- Commercial Space Launch Services Analysis and Assessment
- Satellite Control Architecture and Systems Assessment
- Commercial Spaceport Assessment and Coordination
- Analysis and Assessment of FAA Flight Vehicle Certification Cases
- Support to Civil and Commercial Cooperation Initiatives
- Support to Space Systems Acquisition and Review
- Support to GPS Systems and Resources Issues
- Provide technical support for the Rolling Interoperability Program (RIP)

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- Provide technical guidance on development of the NC3 Technical Architecture
- Participate in Working Group of National Technical Experts-ADP
- Participate in the NATO Open Standards Working Group (NOSWG)
- Update Security/CI resource estimates used to validate Component inputs

FY2001 Plans:

- GPS Modernization and NAVWAR Technical Support
- Extensive Space Control Analysis and Assessment
- Space Launch Infrastructure Assessment
- Commercial Space Launch Services Analysis and Assessment
- Satellite Control Architecture and Systems Assessment
- Commercial Spaceport Assessment and Coordination
- Analysis and Assessment of FAA Flight Vehicle Certification Cases
- Support to Civil and Commercial Cooperation Initiatives
- Support to Space and GPS Systems Acquisition and Review and resource issues
- Provide technical support for the Rolling Interoperability Program (RIP)
- Provide technical guidance on development of the NC3 Technical Architecture
- Update Security/CI resource estimates used to validate Component inputs

General Support for the Joint Staff

FY 1998 Accomplishments:

- Improved representation of logistics in warfare modeling and simulation tools.
- Provided Chairman, JCS with recommendations for a unified command structure by 2010, part of a long-range plan to be implemented by regular two-year cycles.

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- Provided overall strategy to coordinate, manage, and facilitate implementation of deployment process improvement initiatives to support the warfighter from identification of requirements (planning) through final consumption in an Area of Operations (execution), including predeployment, deployment, reception, onward movement, and integration, sustainment and redeployment.
- Provided a refined analytical framework that encompasses the application of enhanced visualization techniques, increased efficiency and effectiveness through meta-analysis (compound analysis) and the ability to better anticipate the decision maker's analytical needs.
- Developed a decision support model and feasible alternatives for a joint CID (Combat Identification) investment strategy directly supporting the JS Short Term CID.

FY 1999 PLANS:

- Provide more efficient method to build domain specific architectures/components for DOD application/software systems, advanced modeling and simulation tools, and a repeatable process for fielding Global Command and Control System components.
- Pursue a focused modernization effort that maintains US qualitative superiority in key warfighting capabilities, exploits the Revolution in Military Affairs, and supports the joint operational concepts delineated in Joint Vision 2010.
- Streamline the joint deployment planning and execution process and save current and life cycle support funding.
- Provide strategic and inter-theater guidance for coherent sustainment and resupply operations, to include the roles and functions of the Services, Defense Logistics Agency, and third party logistics.
- Identify critical joint logistics requirements, and then translate those requirements into Joint Simulation System (JSIMS) capabilities to support existing and future training, mission rehearsals, and other areas.
- Develop independent, unbiased recommendations for potential changes in the assignment of functions (or roles and missions) to the armed forces, as the Chairman considers necessary to achieve maximum effectiveness of the armed forces.

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- Assess existing capabilities in the context of negotiating options development. Decision support tools, e.g., data bases and information management systems, briefing materials and supporting documentation describing required doctrine, plans, read-ahead packages and post-event reports and CINCs' Nuclear Arms Control operational and administrative requirements, shortfalls, and options.
- Monitor events that would drive changes to the Master Navigation Plan (MNP) from the previously issued version revise the MNP
- Publish a handbook on the proliferant Electromagnetic Pulse (EMP) threat environment, as well as establishing nuclear power tactical EMP capabilities.
- Survey the basic processes necessary to make Network-centric Warfare (NCW) work and assess the probabilities that these organizational methods or processes could be adopted in DOD, the Joint Staff, and CINCs/Services/Agencies.
- Identify and define all the functions and associated tasks required to perform the J6 C4I Interoperability and C4ISP Assessment Certification Process of Mission Needs Statements, Operational Requirements Documents (ORDs) and Capstone Requirement Documents (CRD). Propose measures to provide the J-6 staff adequate time to perform all the functions associated with the J6 C4I Interoperability and C4ISP Assessment Certification of MNS, ORDs, and CRDs at current staffing levels.
- Produce a primer that will explain how each Service uses the 14 Joint Standard Air Operations Software applications specified in CJCSI 6271.01A.
- Identify opportunities for further study, experimentation, or development of alternative operational concepts, advanced technologies, organizational architectures, and doctrine required for joint interdiction.
- Technical support to ensure quick-turn analysis tools for evaluation of high value Strike precision platforms.
- Develop and implement a coherent, actionable near-and mid-term Joint investment strategy for CID programs - in effect, progress in CID.
- Optimize available resources through analysis of the Reserve Component contribution in support of the National Military Strategy.

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FY 2000 Plans:

- "Quick-turnaround" assessments directed by Chairman of the Joint Chiefs of Staff
- JV2010 implementation--careful analysis in organization dynamics and structuring.
- Develop and maintain joint doctrine for the employment of the Armed Forces.
- QDR--Assess the CINCs' Theater-Engagement.
- QDR--Follow-on Reserve Component study to identify and evaluate alternative concepts for employing Reserves

FY 2001 PLANS:

- Continue to provide responsive wargaming, analysis and assessment capabilities to support future Chairman of the Joint Chiefs of Staff requirements
- Provide Joint Modeling and Simulation to the Joint Staff and CINCs
- Assess Joint Warfighting Capabilities
- Continue to use collaborative analysis process to exploit the existing analytic expertise in the Services and to help in the assessment of complex joint issues.
- QDR--Develop total force employment database for peacetime requirements/tempo analysis
- QDR--Warfighting impact changes spawned from MRS 05

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B. <u>Program Change Summary</u>	<u>FY 1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>	<u>TOTAL COST</u>
Previous President's Budget	29.178	30.021	30.519	31.058	N/A
Appropriated Value	30.376	30.021	N/A	N/A	
Adjust to Appropriated Value/President's Budget	0.216	(0.380)	(1.013)	(1.042)	
Congressional Distributed and Undistributed Reductions	2.260	1.312	N/A	N/A	
Current Budget Submit/President's Budget	30.592	29.641	29.506	30.016	
Below Threshold Reprogramming	2.400	.948			

Funding: FY1999 adjustment to former President's Budget due to Appropriations Conference Report.

Schedule: N/A

Technical: N/A

C. Other Program Funding Summary Cost N/A

D. Schedule Profile N/A