| Exhibit R-2, RDT&E Budget Item Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | R-1 Item Nomenclature:<br>Manufacturing Technology, 0708011S | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Total PE Cost | 45.894 | 39.455 | 18.219 | 18.484 | 19.076 | 19.475 | 19.967 | 20.313 |
| Project 1: Combat Rations (CR) | 1.990 | 1.972 | 2.000 | 2.007 | 2.010 | 2.020 | 2.030 | 2.040 |
| Project 2: Apparel Research Network (ARN) | 3.997 | 3.822 | 3.742 | 3.727 | 4.000 | 4.140 | 4.366 | 4.427 |
| Project 3: Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT) | 3.249 | 2.292 | 1.205 | 1.308 | 1.434 | 1.469 | 1.498 | 1.528 |
| Project 4: Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST) | 1.939 | 1.918 | 1.013 | 1.116 | 1.238 | 1.267 | 1.292 | 1.318 |
| Project 5: Customer Value Industrial Plant Equipment (CV:IPE) | 1.170 | 0.776 | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 6: Classified Programs (CP) | 4.660 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 7: Laser Additive Manufacturing (LAM) | 2.375 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 8: Twelve Screw Extruder for Fuel Cell Technology (FCT) | 1.484 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 9: Supply Chain Management (SCM) | 4.749 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 10: Other Congressionally Added Programs (OCAs) | 3.462 | 16.186 | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 11: Defense Microelectronics (DMEA) | 16.819 | 12.489 | ----- | ----- | ----- | ----- | ----- | ----- |
| Project 12: Material Acquisition Electronics (MAE) *formerly under Log R&D BA3* | 0.000 | 0.000 | 10.259 | 10.326 | 10.394 | 10.579 | 10.781 | 11.000 |

| Exhibit R-2, RDT&E Budget Item Justification | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | R-1 Item Nomenclature:<br>Manufacturing Technology 0708011S |

**A. Mission Description and 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), Procurement Readiness Optimization—Advanced Casting Technology (PRO-ACT), and Procurement Readiness Optimization—Forging Advance System Technology (PRO-FAST) - in addition to congressionally added programs. Copper Based Casting Technology, Defense Supply Chain Technology, Laser Additive Manufacturing, Twelve Screw Extruder, Other Congressionally Added programs for Next Generation Manufacturing Technology and Small Business Technical Procurements. Congress also added funding in FY 2004 for Spray Cooling Manufacturing for DMEA to continue its work with the services to increase service familiarity with this advanced technology.

**B. Program Change Summary:**

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Previous PB 05 | 45.871 | 11.005 | 10.391 | 10.418 |
| Current PB 06 | 45.894 | 39.455 | 18.219 | 18.484 |
| Total Adjustments | .023 | 28.450 | 7.828 | 8.066 |
| Congressional Additions | | 29.275 | | |
| Program adjustments | .023 | -0.825 | 0.019 | -0.012 |
| Program realignment | | | 7.847 | 8.054 |

Change Summary Explanation:

FY 2004: Reflects OSD adjustment of $0.023 Million for CIS correction.

FY 2005: Adjustments include Congressional Additions of $29.275 Million and reductions for Management Improvement ($0.122 Million), Set aside ($0.245 Million) and FFRDC/CAAS ($0.458 Million)

FY 2006: Reflects a net increase of $7.847 Million. Project decreases offset by the realignment of Material Acquisition Electronics (MAE) Project (formerly under Logistics R&D Technology Demonstration BA 3) to the Manufacturing Technology (BA7) program element. Program adjustments are a reduction of $0.019 Million for Contract Support.

FY 2007 Annualization of FY 2006 changes and a program reduction of $0.012 Million for contract support.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-2a, RDT&E Project Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Combat Rations, Project 1 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 1: Combat Rations | 1.967 | 1.972 | 2.000 | 2.007 | 2.010 | 2.020 | 2.030 | 2.040 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** The program partners identify problems and develop new technology for implementation in their plants. This occurs after demonstrations conducted at a University site, unifies 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 the DLA mission. DLA buys about $200 million worth of Combat Rations annually. The product is military unique. The limited industrial base production is pushed to its limits producing variety and quantities needed for surge, and has been dependent on orders from Government to remain viable. This initiative ensures that DLA will have an industrial base to continue to support war fighters with needed combat rations.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | 1.967 | 1.972 | 2.000 | 2.007 |
| RDT&E Articles Quantity – N/A | | | | |

Develop and implement improved retort rack materials and design; implement ultra-sonic sealing for MRE; develop and implement streamline inspection criteria for operational rations. Evaluate commercial items for introduction into ration program, aid in extending the shelf life of combat rations.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Combat Rations, Project 1 |

A. Project Cost Breakdown

**Combat Rations**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 1.967 | 1.972 | 2.000 | 2.007 |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.967 | 1.972 | 2.000 | 2.007 | Cont | Cont |
| Ameriqual | Cost, No Fee | 12/01/2001 | Partner | | | | | | |
| Georgia, Univ of | Cost, No Fee | 12/01/2001 | Partner, STP* | | | | | | |
| NCFST | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Ohio State Univ | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| R&D Associates | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Rutgers | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| SOPAKCO | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Stegner | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Sterling | Cost, No Fee | 11/25/2001 | Partner | | | | | | |
| TEES (TAMU) | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Tennessee, Univ of | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Wornick | Cost, No Fee | 12/01/2001 | Partner, | | | | | | |
| Washington State Univ | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |
| Rutgers Demo Site | Cost, No Fee | 12/01/2001 | Partner, STP | | | | | | |

Government Furnished Property: None.

*STP = "Short Term Project"

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness<br>Manufacturing Technology | Project Name and Number -<br>Combat Rations, Project 1 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Initial Review, Disposition of Candidate Projects, initial award of delivery orders | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Initial Review, Disposition of Candidate Projects, initial award of delivery orders | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Follow on assessment of candidate Projects, acceptance of qualified subjects by JSG. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Continuing award of delivery orders, start performance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conduct workshops to review projects, evaluate new candidate proposals, initiate qualified projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conduct IPRs to manage and control progress, assure that results are achieved and implemented when applicable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Combat Rations, Project 1 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| BAA Preparation and Issue | | | | 1-4Q | 1-4Q | | | |
| BAA Closing and Evaluations | | | | | 1-4Q | | | |
| Contracts Awarded | | | | | 1-4Q | | | |
| Kick Off Meeting, Joint Planning Sessions | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| -- Selection and Award of Demo Site | | | | | 1-4Q | | | |
| -- Arrangements for Facilitation | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Initial Review and Disposition of Candidate Projects, initial award of delivery orders | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Follow on assessment of candidate Projects, acceptance of qualified subjects by JSG. | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Continuing award of delivery orders | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Conduct workshops to review projects, evaluate new candidate proposals, initiate qualified projects | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Conduct IPRs to manage and control progress, assure that results are achieved and implemented when applicable | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |

| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Apparel Research Network (ARN), Project 2 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 2: Apparel Research Network (ARN) | 3.997 | 3.822 | 3.742 | 3.727 | 4.000 | 4.140 | 4.366 | 4.427 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** The Department of Defense, through the Defense Logistics Agency, purchased $2.0 billion of clothing and textile items in 2003. The lead-time is up to 15 months and the current inventory acquisition value over $1 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 apparel producers to access state-of-the-art supply chain management technologies through its R&D and technology transfer mechanism. It allows the military clothing supply chain to have asset visibility and decision support at retail, wholesale and manufacturing levels. The goal of this program is to reduce the lead-time from 6 months to 6 weeks and to reduce the inventory and inventory carrying costs by 50%. This reduction further reduces the cost to the customer.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| AAVS | 1.557 | 1.302 | 1.262 | 1.251 |

**ARN Asset Visibility System** (AAVS) – a data repository that integrates data from existing DoD systems, Services' legacy systems, manufacturers' data and 3D scan data collected from ARN developed systems with decision support via a web-based interface.

Plans include:

- Successfully implemented for recruit clothing supply chain up to end-item manufacturers.
- Further extension of AAVS fiber and textiles and non-recruit clothing items.

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| VIM-ASAP | 0.600 | 1.300 | 1.262 | 1.232 |

**Virtual Item Manager – ARN Supply-chain Automated Processing** (VIM-ASAP) – VIM is the system-wide user interface for all user access. ASAP is a web-based system that pulls from the data collected in the AAVS Datamart for military clothing manufacturers. ASAP receives electronic orders, captures work in progress and finished goods inventories, prepares shipping documents, transmits invoices and receives payments electronically.

Plans include:

- Successful implementations at selected group of defense clothing manufacturers.
- Connecting to DoD Wide Area Work Flow (WAWF) as the front end interface to WAWF-RA (Receipt and Acceptance).
- Expanding to include other commodities – Defense Supply Center Richmond.
- Future implementation of Balance Inventory Flow Replenishment to level manufacturing production capabilities.

| Exhibit R-2a, RDT&E Project Justification | | | | Date: February 2005 |
|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | Project Name and Number -<br>Apparel Research Network (ARN), Project 2 | | |
| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
| VIM -IRM | 1.840 | 1.220 | 1.218 | 1.244 |

**Virtual Item Manager – Integrated Retail Module** – VIM/IRM is the system-wide user interface for all user access. The IRM pulls and pushes data to the AAVS Datamart to provide a fully integrated system, from 3-D full body scanning to size selection issue database, with powerful inventory management tools for DLA/DSCP wholesale item managers as well as DLA's customers - the service item managers - to view and manage inventory and supplies throughout the supply chain.

Plans include:

- Successful implementations at Marine Corp Recruit Depot (MCRD) San Diego and Parris Island.
- Successful implementations at (5) Army, and (1) Air Force Recruit Training Centers.
- Further expansion to DLA organizational clothing and individual equipment (OCIE) sites and Army Central Issue Facilities (CIF) and. Army Ft. Carson CIF pilot for developing the modernized OCIE/CIF operation.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Apparel Research Network (ARN), Project 2 |

A. Project Cost Breakdown

**Apparel Research Network**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 3.997 | 3.822 | 3.742 | 3.727 |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| Note: All contracts are Fixed Cost or Cost Plus Fixed Fee | | | | 3.997 | 3.822 | 3.742 | 3.727 | Cont | Cont |
| PDIT | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |
| Clemson Univ | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |
| AdvanTech | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |
| Univ of Louisiana | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |
| Dan River | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |
| Human Solutions | Cost Plus Fixed Fee/Contractor | 03/2002 | | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Apparel Research Network (ARN), Project 2 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| ARN Asset Visibility System (AAVS)<br>▪ Expand Supply Chain to OCIE, and Fiber & Fabric Items | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Virtual Item Manager - ARN Supply Chain Automated Processing (VIM-ASAP)<br>▪ Leveraging WAWF<br>▪ Balanced Inventory Flow Replenishment<br>▪ Expanding to include other commodities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Virtual Item Manager – Integrated Retail Module (VIM-IRM)<br>• Additional Army CIF & DLA OCIE sites<br>• Army Ft. Carson CIF Pilot | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Apparel Research Network (ARN), Project 2 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| **ARN Asset Visibility System** | 1-4Q | 1-4Q | 1-4Q | 1-3Q | | | | |
| ▪ Expand supply chain to Organizational Clothing & Individual Equipment and Textiles & Fiber | 1-4Q | 1-4Q | 1-4Q | 1-3Q | | | | |
| **Virtual Item Manager - ARN Supply Chain Automated Processing (VIM-ASAP)** | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| ▪ Leveraging WAWF | 1-4Q | 1-4Q | 1-4Q | | | | | |
| ▪ Balanced Inventory Flow Replenishment System | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| ▪ Expanding to include other commodities | | 3-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| **Virtual Item Manager – Integrated Retail Module (VIM-IRM)** | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| ▪ Additional Army CIF and DLA OCIE sites | 3-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Exhibit R-2a, RDT&E Project Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT), Project 3 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 3: Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT) | 3.249 | 2.292 | 1.205 | 1.308 | 1.434 | 1.469 | 1.498 | 1.528 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** About 6% of all weapon system spare parts are made from castings, but they account for about 10% of all backorders, due to obsolete and incomplete technical data packages, and atrophied supply chains. The decrease the FY 2006 and FY 2007 request from the FY 2005 estimate is due to certain R&D initiatives being transferred to regular business processes.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Collaborative Problem Solving | 1.521 | 1.563 | 0.795 | 0.623 |

Collaborative problem solving environments have been prototyped with several of the Military Service Engineering Support Activities. Each environment is custom designed to reflect the needs of the weapon system and the processes used by the Services. Collaborative teams include representatives of DLA, the Services and prime and subcontractors. Efforts have been focused on over 500 different weapon systems parts that have caused backorder problems. This model of providing solutions to vexing spare parts sourcing problems will be further developed and deployed throughout the DoD as resources and opportunities permit.

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Casting Technology for Cost Reduction | 1.728 | 0.729 | 0.410 | 0.685 |

Casting technology for cost reduction is under development at several sites, including simulation of size, position and type of cast steel porosity and its effect on service life; development of a foundry tooling database; enhancement of die casting visualization software to reduce trial and error; melting and molding process improvements for seal rings used in armored vehicles; investigation of cheaper tooling materials for short run production; improved prediction of patternmakers shrink which will reduce production time. FY 2004 includes congressional funding for Copper Based Casting Technology ($0.990 million); and Agency base funding for casting technology ($0.738 million).

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT), Project 3 |

A. Project Cost Breakdown

**Procurement Readiness Optimization—Advanced Casting Technologies (PRO-ACT)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 3.249 | 2.292 | 1.205 | 1.308 |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| ATI | Cost Share | 06/23/2000 | N/A | 3.249 | 2.292 | 1.205 | 1.308 | Cont | Cont |
| ARL | Cost Plus Fixed Fee/ Contractor | TBD | | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT), Project 3 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Collaborative Problem Solving | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Casting Technology for Cost Reduction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper Based Casting Technology for Energy Efficient Electric Motors | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT), Project 3 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Collaborative Problem Solving | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Casting Technology for Cost Reduction | 1-4Q | 1-4Q | 1-4Q | 1-2Q | | | | |
| Copper Based Casting Technology for Energy Efficient Electric Motors | 2-4Q | 1-4Q | | | | | | |
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| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST), Project 4 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 4: Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST) | 1.939 | 1.918 | 1.013 | 1.116 | 1.238 | 1.267 | 1.292 | 1.318 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** About 6% of all weapon system spares are made from forgings but forgings account for 10% of all backorders, due to obsolete and incomplete technical data packages and atrophied supply chains. The decrease in FY 2006 and FY 2007 request from the FY 2005 estimate is due to certain R&D initiatives being transferred to regular business processes.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Collaborative Problem Solving | 1.292 | 1.308 | 0.727 | 0.736 |

This program develops and demonstrates innovative solutions to forged spare parts problems by building collaborative teams with DLA and the Military Services. It also develops fast, cheap tooling technology. Tooling is a major lead-time driver for small quantity forging production. Collaborative problem solving environments have been prototyped with several of the Military Service Engineering Support Activities. Each environment is custom designed to reflect the needs of the weapon system and the processes used by the Services. Collaborative teams include representatives of DLA, the Services and prime and subcontractors. Efforts have been focused on over 50 different weapon systems parts that have caused backorder problems. This model of providing solutions to vexing spare parts sourcing problems will be further developed and deployed throughout the DoD as resources and opportunities permit.

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Forging Technology for Lead Time Reduction | 0.647 | 0.610 | 0.286 | 0.380 |

Forging technology for lead-time development is under development at several sites. Rapid low cost tooling will be developed based on a spray metal technique; lean manufacturing demonstrations in a job shop forging environment will be used to prototype new practices for faster forging; a database of forging dies will be developed and fielded.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST), Project 4 |

A. Project Cost Breakdown

**Procurement Readiness Optimization—Forging Advanced System Technology (PRO-FAST)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 1.939 | 1.918 | 1.013 | 1.116 |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| ATI | Cost Share | 02/09/2001 | N/A | 1.939 | 1.918 | 1.013 | 1.116 | Cont | Cont |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | | | | | | | | | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | | | | | | Project Name and Number - Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST), Project 4 | | | | | | | | | | | | | | | | | | | |
| **Fiscal Year** | **2004** | | | | **2005** | | | | **2006** | | | | **2007** | | | | **2008** | | | | **2009** | | | | **2010** | | | | **2011** | | | |
| | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** | **1** | **2** | **3** | **4** |
| Collaborative Problem Solving | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forging Technology for Lead Time Reduction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number - Procurement Readiness Optimization-Forging Advanced System Technology (PRO-FAST), Project 4 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Collaborative Problem Solving | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | |
| Forging Technology for Lead Time Reduction | 1-4Q | 1-4Q | 1-4Q | 1-4Q | | | | |
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| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Customer Value Industrial Plant Equipment (CV:IPE), Project 5 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 5: Customer Value Industrial Plant Equipment (CV:IPE) | 1.170 | 0.776 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** Industrial Plant Equipment (IPE) is used by maintenance depots, air logistics centers and on bases and ships everywhere to maintain weapons. When this equipment becomes worn, it can either be rebuilt or replaced with new. It's not unusual for rebuilt equipment to be 40% cheaper than new equipment. Rebuilds also save money because they use the same foundations and utility connections. Rebuilds can be challenging because there is little standardization, spare parts can be hard to get, and old equipment can conceal hidden defects. Rebuild times can stretch out, which is a risk factor to maintenance activities, because large machines can have unique capabilities and cannot be kept offline for long periods.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Lean Manufacturing Principles | 1.170 | 0.776 | 0.000 | 0.000 |

This project applies lean manufacturing principles to the overhaul of IPE. Lean manufacturing is a methodology that looks at every process step from the end consumer's viewpoint. If it doesn't add value, it is a candidate for elimination. Lean manufacturing has a toolbox of methods that will be applied to rebuilding IPE, including standard work, visible processes, capable processes, and empowered workforce.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Customer Value Industrial Plant Equipment (CV:IPE), Project 5 |

A. Project Cost Breakdown

**Customer Value Industrial Plant Equipment (CV:IPE)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 1.170 | 0.776 | ----- | ----- |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.170 | 0.776 | ----- | ----- | | |
| Various | COST PLUS FIXED FEE | | 03/2002 | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Customer Value Industrial Plant Equipment (CV:IPE), Project 5 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Baselining Current Processes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop Standard Templates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| New Methods for Project Initiation & Risk Management Plans | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rapid Design of Control Systems | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parametric Estimating Models for Rapid Cost Estimates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Customer Value Industrial Plant Equipment (CV:IPE), Project 5 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Baselining Current Processes | 1-4Q | 1-4Q | | | | | | |
| Develop Standard Templates | 1-4Q | 1-4Q | | | | | | |
| New Methods for Project Initiation & Risk Management Plans | 1-4Q | 1-4Q | 1-4Q | | | | | |
| Rapid Design of Control Systems | 1-4Q | | | | | | | |
| Parametric Estimating Models for Rapid Cost Estimates | 1-4Q | 1-4Q | 1-4Q | | | | | |
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| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Classified Programs (CP), Project 6 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 6: Classified Programs (CP) | 4.660 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

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

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 4.660 | 0.000 | 0.000 | 0.000 |

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Laser Additive Manufacturing (LAM), Project 7 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 7: Laser Additive Manufacturing (LAM), | 2.375 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** This program will develop a rapid manufacturing capability that produces high performance military and commercial components via laser additive manufacturing. It will be executed to realize as many applications as possible across the services and also support the DLA mission. The Laser Additive Manufacturing (LAM) process has the ability to produce components with properties bridging between the high end of castings and the low end of forgings. The major advantages are a reduced cycle time of up to 75%, reduced cost, elimination of forging dies and casting molds, inserts and fixtures, and reduced machining requirements.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 2.375 | 0.000 | 0.000 | 0.000 |

A joint advisory board will be constituted to provide oversight. Initial applications are planned for components of aerospace systems including fighters, and helicopters, and missiles. A portion of the program will also focus on repairs. Weapon system contractors such as Boeing and Lockheed Martin will be participating to assure the smooth transition of the technology. Aerospace components have been selected for transition. A qualification matrix has been developed. Prototype parts will be processed and qualified. A test matrix to qualify repair parts will be developed. Technology for non-aerospace applications will also be developed. The technology will be transitioned to as many parts as possible. F-15 Pylon ribs are now flying as a result of previous year's work. Pylon panels are planned for the C-17 and have been approved for use.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Laser Additive Manufacturing (LAM), Project 7 |

A. Project Cost Breakdown

**Laser Additive Manufacturing (LAM)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 2.375 | ----- | ----- | ----- |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 2.375 | ----- | ----- | ----- | | |
| Aeromet Corp | Section 845 Prototype Agreement | 27 Sep 02 | | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Laser Additive Manufacturing (LAM), Project 7 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Establish Tri-service joint advisory board. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Select target aerospace components for transition | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop a qualification matrix for the parts | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Process prototype parts and qualify the process, material, and the part | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Research DOD parts that can be repaired at a reduced cost versus procurement of new parts | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Establish a test matrix for repair parts to qualify the repair | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Produce and qualify prototype parts | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop technology for non-aerospace applications | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Transition LAM | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Laser Additive Manufacturing (LAM), Project 7 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Establish Tri-service joint advisory board. | | | | | | | | |
| Select target aerospace components for transition | | | | | | | | |
| Develop a qualification matrix for the parts | 1-4Q | | 1-4Q | | | | | |
| Process prototype parts and qualify the process, material, and the part | 1-4Q | | 1-4Q | | | | | |
| Research DOD parts that can be repaired at a reduced cost versus procurement of new parts | 1-4Q | | 1-4Q | | | | | |
| Establish a test matrix for repair parts to qualify the repair | 1-4Q | 1-4Q | 1-4Q | | | | | |
| Produce and qualify prototype parts | 1-4Q | 1-4Q | 1-4Q | | | | | |
| Develop technology for non-aerospace applications | 1-4Q | 1-4Q | 1-4Q | | | | | |
| Transition the LAM process for as many parts as possible | 1-4Q | 1-4Q | 1-4Q | | | | | |
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| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Twelve Screw Extruder for Fuel Cell Technology (FCT), Project 8 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 8: Twelve Screw Extruder for Fuel Cell Technology (FCT) | 1.484 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** A critical part of the organization mission focuses on the leveraging of commercial technology to develop advanced manufacturing technology to support military ground vehicle alternative propulsion technology development and advanced materials design and applications. Enhancements in materials alloying technology are critical to efficient and economical production of 'Fuel Cell' alternative propulsion technology, and to the development and application of light weight, fuel efficient and durable materials structures and components.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 1.484 | 0.000 | 0.000 | 0.000 |

Under FY 2003 funding, the program demonstrated the capability of the 12 Screw Extrusion material alloying process to efficiently, effectively and economically alloy materials necessary to manufacture critical components of Fuel Cell alternative propulsion power generation equipment. Under FY 2004 program funding, the Twelve Screw Extrusion process will be used to fabricate Fuel Cell power generation 'stacks' to provide the electro-chemical reaction necessary to convert fuel into emission free electrical power for ground vehicle applications. In addition, the program will leverage other technology initiatives to demonstrate the capability to alloy/mix developmental materials for fabrication into lightweight, durable ground vehicle and material transport structures. DLA is executing the FY 2003 contract and scoping the FY 2004 phase with the additional funds.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Twelve Screw Extruder for Fuel Cell Technology (FCT), Project 8 |

A. Project Cost Breakdown

**Twelve Screw Extruder for Fuel Cell Technology (FCT)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 1.484 | ----- | ----- | ----- |

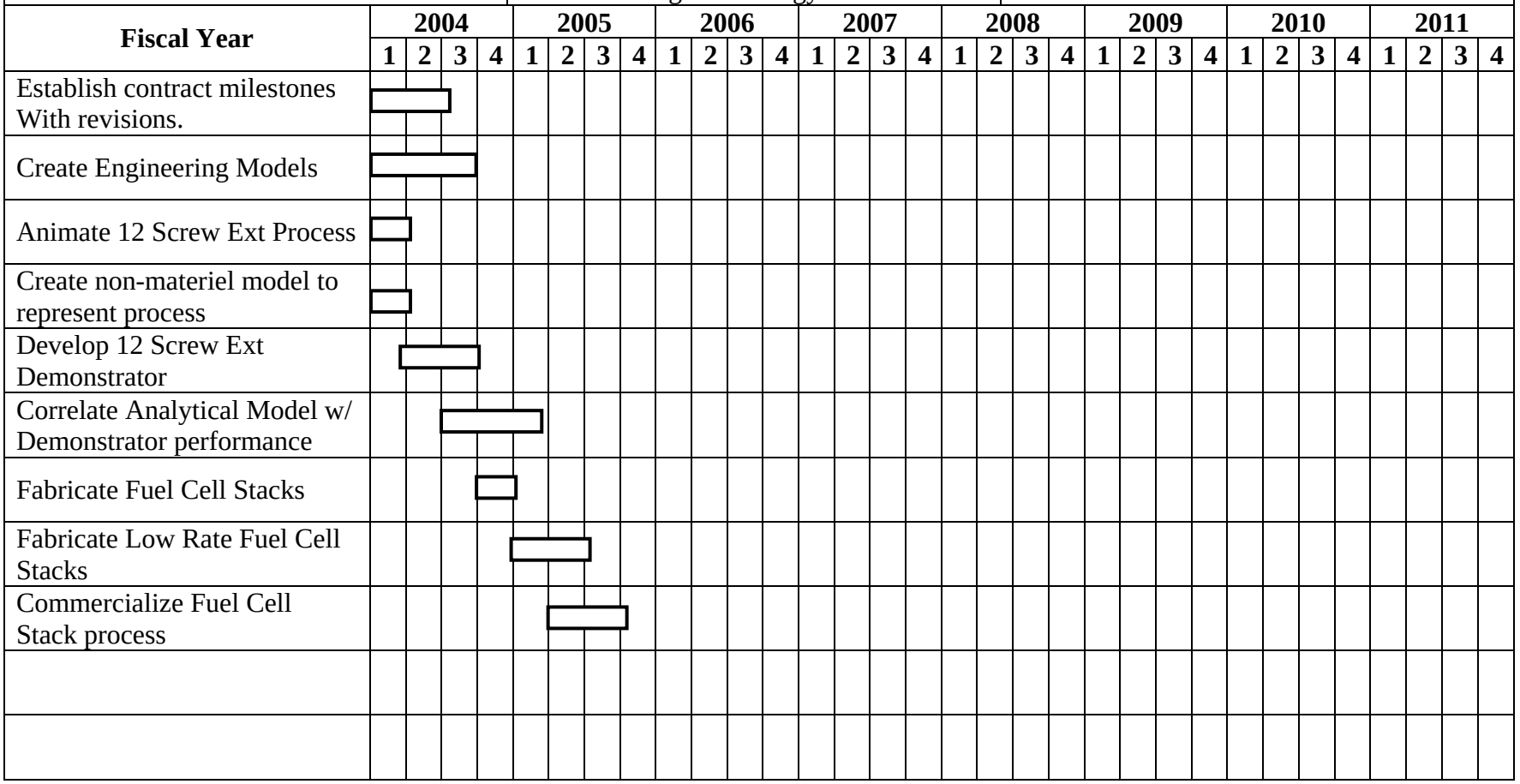
B. Budget Acquisition History and Planning Information

Performing Organizations

| Contractor or Government Performing Activity | Contractor Method/Type Or Funding Vehicle | Award or Obligation Date | Performing Project Activity BAC | FY 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.484 | ----- | ----- | ----- | | |
| U.S. Army TACOM | MIPR | July 03 | | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | Date: February 2005 |
|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Twelve Screw Extruder for Fuel Cell Technology (FCT), Project 8 |



| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Twelve Screw Extruder for Fuel Cell Technology (FCT), Project 8 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Establish contract milestones<br>With revisions. | 1-2Q | | | | | | | |
| Create Engineering Models | 1-2Q | | | | | | | |
| Animate 12 Screw Ext Process | 1-4Q | | | | | | | |
| Create non-materiel model to represent process | 1-4Q | | | | | | | |
| Develop 12 Screw Ext Demonstrator | 1-4Q | | | | | | | |
| Correlate Analytical Model with Demonstrator performance | 3-4Q | | | | | | | |
| Fabricate Fuel Cell Stacks | 4Q | 1Q | | | | | | |
| Fabricate Low Rate Fuel Cell Stacks | | 1-3Q | | | | | | |
| Commercialize Fuel Cell Stack process | | 2-4Q | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | | Project Name and Number -<br>Supply Chain Management (SCM), Project 9 | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 9: Supply Chain Management (SCM) | 4.749 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** The DLA mission is to get the right item, at the right time, to the right place, at the right price, every time in support of America's war fighter. To accomplish its mission DLA must use an integrated combat logistics solution that is coordinated among the Services and across DoD to meet all combat support requirements in peace and war. There is a need for the Agency to stay abreast of the latest supply chain management principles and techniques that will improve the supply availability of DLA-managed items by optimizing supply chains to shorten lead times and reduce costs. The Agency must ensure that outsourcing strategies are coordinated, that performance metrics are in place to measure effectiveness, that the organizational structure promotes successful supply chain management and that the latest electronic commerce initiatives are incorporated into its supply chain.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 4.749 | 0.000 | 0.000 | 0.000 |

Concurrent Technologies Corporation (CTC) has initiated some 33 Supply Chain Management projects for DLA and the Services since the inception of this program in FY 2002.

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Supply Chain Management (SCM), Project 9 |

A. Project Cost Breakdown

**Supply Chain Management (SCM)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 4.749 | ----- | ----- | ----- |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| Concurrent Technology | TBD | TBD | | 4.749 | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness<br>Manufacturing Technology | Project Name and Number -<br>Supply Chain Management (SCM), Project 9 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| SCM Integration Planning Order | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Virtual Data Mart | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment Readiness (MERIT & Multi-Service MERIT) | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| Supply Chain Visualization<br>-- Source Readiness (MERIT applied to manufacturers)<br>-- Map-enabled SPIDERS | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| DLIS Advanced Cataloging<br>-- NCS an ISO Standard<br>-- eOTD-based demos | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |
| RFID Technology Assessment | | | | | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TDX<br>-- Rapid manufacturing<br>-- Diminishing manufacturing sources<br>-- Robust/ready small manufacturing base | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Supply Chain Management (SCM), Project 9 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| SCM Integration Planning Order | 2-4Q | 1-4Q | 1-4Q | 1-2Q | | | | |
| Virtual Data Mart | 1-4Q | 1-4Q | | | | | | |
| Equipment Readiness (MERIT & Multi-Service MERIT) | 1-4Q | 1-4Q | | | | | | |
| Supply Chain Visualization | 1-4Q | 1-4Q | 1-4Q | | | | | |
| DLIS Advanced Cataloging | 1-4Q | 1-4Q | 1-4Q | 1-2Q | | | | |
| RFID Technology Assessment | 1-4Q | 1-4Q | | | | | | |
| BSM Configuration and Technical Notification program Multi-Service CaTNP | 1-4Q | 1-4Q | | | | | | |
| TDX | 1-4Q | 1-4Q | 1-4Q | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Exhibit R-2a, RDT&E Project Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | Project Name and Number -<br>Other Congressionally Added Programs (OCAs), Project 10 | | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 10: Other Congressionally Added Programs (OCAs) | 3.462 | 16.186 | ----- | ----- | ----- | ----- | ----- | ----- |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item Justification:** Congressional adds. Programs are managed to the maximum extent possible to meet Defense needs and to fulfill Congressional expectations. FY 05 adds are still in requirements definition phase.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 3.462 | 16.186 | ----- | ----- |

FY 2004: Execution is underway on the following programs:

- Next Generation Manufacturing Technology ($2.217M)
- Small Business Technical Procurement ($1.245M)

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Other Congressionally Added Programs (OCAs), Project 10 |

A. Project Cost Breakdown

**Other Congressionally Added Programs (OCAs)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 3.462 | 16.186 | ----- | ----- |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| TBD | | | | 3.462 | 16.186 | ----- | ----- | | |

Government Furnished Property: None.

| Exhibit R-2a, RDT&E Project Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | Project Name and Number -<br>Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, Project 11 | | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 11: Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, | 16.819 | 12.489 | ----- | ----- | ----- | ----- | ----- | ----- |
| RDT&E Articles Quantity- N/A | | | | | | | | |

*Defense Emergency Response Fund (DERF): N/A

**A. Mission Description and Budget Item Justification:** The Defense Microelectronics Activity **(**DMEA) mission is to leverage advanced technologies to extend the life of weapon systems, to solve operational problems (e.g., reliability and maintainability) and to address diminishing manufacturing sources. The DMEA provides technical and application engineering support for the implementation of advanced microelectronics research technologies from design through assembly and installation. The DMEA manages an organic capability to support these strategically important technologies within the DoD. These advanced technologies are translated into solutions for military needs. Spray Cooling Manufacturing Engineering efforts are to develop manufacturing engineering and process tools to support the Department's transition of spray cooling technology from laboratory prototypes to production and to implement advanced manufacturing, logistics, and sustainment philosophies to facilitate the successful deployment of advanced spray cooling technology components and products in weapon system platform applications.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | 16.819 | 12.489 | ----- | ----- |

FY 2004 Plans (16.819)

- Develop key manufacturing processes and engineering design tools needed for low cost, high volume fabrication and assembly.
- Analyze vendor base and qualification activities necessary to establish a solid supplier base for all key system components
- Implement the above into a pilot line and develop the processes needed to enable transition into a low-cost manufacturing base to ensure a reliable supply
- Develop tools needed to support rapid in-field maintenance and logistics.

| Exhibit R-2a, RDT&E Project Justification | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | Project Name and Number -<br>Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, Project 11 | | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 11: Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, | 16.819 | 12.489 | ----- | ----- | ----- | ----- | ----- | ----- |
| RDT&E Articles Quantity - N/A | | | | | | | | |

**C. Other Program Funding Summary:** N/A

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, Project 11 |

A. Project Cost Breakdown

**Manufacturing Engineering of Spray Cooling**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | 16.819 | 12.489 | ----- | ----- |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| Isothermal | CPFF | Mar 04 | | 16.819 | 12.489 | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness<br>Manufacturing Technology | Project Name and Number -<br>Defense Microelectronics Activity (DMEA),<br>Mfg Engineering of Spray Cooling, Project 11 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Key mfg. processes and tools | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vendor base and qualification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implement pilot line and process | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop in-field support tools | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rapid prototype capability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Failure analysis closed-loop feedback | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implement strategic manufacturing partnerships | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop advanced logistics capabilities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Advance lean manufacturing initiative | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | Project Name and Number -<br>Defense Microelectronics Activity (DMEA), Mfg Engineering of Spray Cooling, Project 11 | | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Key mfg. processes and tools | 3-4Q | 1-4Q | | | | | | |
| Vendor base and qualification | 3-4Q | 1-4Q | | | | | | |
| Implement pilot line and process | | 1-4Q | | | | | | |
| Develop in-field support tools | 3-4Q | 1-4Q | | | | | | |
| Rapid prototype capability | | 3-4Q | 1-3Q | | | | | |
| Failure analysis closed-loop feedback | | 2-4Q | 1-3Q | | | | | |
| Implement strategic manufacturing partnerships | | 2-4Q | 1-3Q | | | | | |
| Develop advanced logistics capabilities | | 2-4Q | 1-4Q | | | | | |
| Advance lean manufacturing initiative | | 3-4Q | 1-4Q | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Exhibit R-2a, RDT&E Project Justification | | | | | | | | Date: February 2005 |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | | | Project Name and Number -<br>Material Acquisition: Electronics (MAE), Project 12 | | | | | |
| Cost ($ in millions) | FY 2004 | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | FY 2010 | FY 2011 |
| Project 12: Material Acquisition: Electronics (MAE) | ----- | ----- | 10.259 | 10.326 | 10.394 | 10.579 | 10.781 | 11.000 |
| RDT&E Articles Quantity- N/A | | | | | | | | |

**A. Mission Description and Budget Item 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 3 years, 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 88% of the IC supply class, must have a capability to manufacture these devices. This project develops this capability and will expand it to succeeding generations of obsolete ICs through the Advanced Microcircuit Emulation program. Prior to FY 2006, Material Acquisition Electronics was aligned under Logistics R&D Technology Demonstration, PE 0603712S.

**B. Accomplishments/Planned Program**:

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | ----- | ----- | 10.259 | 10.326 |

The MAE project covers development of IC fabrication technology to continue to expand the capability to emulate succeeding generations of discontinued technology. This will include Low Rate Initial Production of earlier development efforts (e.g., 200K emulation Array) and integration of Advanced Tooling and development of future capabilities (e.g., High Speed/ High Density Emulation Arrays). Technology development will continue to deeper sub-micron (<1.0 um) feature sizes and faster operating speeds. Development of IC design capability and design model library to realize emulation performance and functional requirements outcomes using developed IC fabrication technology. This design capability will address both standard catalog ICs and Application Specific Integrated Circuits (ASICs) and will accommodate both in-house and third-party (principally OEM) design requirements.

| | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| Accomplishment/ Effort/Subtotal Cost | | | | |
| RDT&E Articles Quantity – N/A | ----- | ----- | ----- | ----- |

The congressionally added Microelectronics Testing Technology/Obsolescence Program will test, evaluate, and assess wide range microelectronics components that comprise so many of today's sophisticated military and commercial systems.

**C. Other Program Funding Summary:**

**D. Acquisition Strategy:** N/A

| Exhibit R-3, RDT&E Program Element/Project Cost Breakdown | Date: February 2005 |
|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-wide BA 7 | Project Name and Number -<br>Material Acquisition: Electronics (MAE), Project 12 |

A. Project Cost Breakdown

**Material Acquisition: Electronics (MAE)**

| Project Cost Categories | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|---|---|---|---|---|
| a. Manufacturing Process Support Costs | ----- | ----- | 10.259 | 10.326 |

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 2004 | FY 2005 | FY 2006 | FY 2007 | Budget to Complete | Total Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ----- | ----- | 10.259 | 10.326 | | |
| Sarnoff Corp.<br>LMI<br>ARINC<br>SPAWARSYSCEN | | | | | | | | | |

Government Furnished Property: None.

| Exhibit R-4, Schedule Profile | | | Date: February 2005 |
|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | Project Name and Number -<br>Material Acquisition: Electronics (MAE), Project 12 | |

| Fiscal Year | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Perform Gap Analysis (GA)of Commercial Technology. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perform base array designs required to fill GA. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Update design library. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop prototypes for test and insertion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop Low Rate Initial Production (LRIP) capability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transition new microcircuit designs to LRIP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perform process review | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan required process improvements. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implement process improvements. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monitor and adjust process improvements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Exhibit R-4a, Schedule Detail | | | | | | | Date: February 2005 | |
|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>RDT&E, Defense-Wide BA 7 | Program Element Number and Name<br>PE 0708011S Industrial Preparedness Manufacturing Technology | | | | Project Name and Number -<br>Material Acquisition: Electronics (MAE), Project 12 | | | |
| **Schedule Profile** | **FY2004** | **FY2005** | **FY2006** | **FY2007** | **FY2008** | **FY2009** | **FY2010** | **FY2011** |
| Perform Gap Analysis (GA)of Commercial Technology. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Perform base array designs required to fill GA. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Update design library. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Develop prototypes for test and insertion. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Develop Low Rate Initial Production (LRIP) capability | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Transition new microcircuit designs to LRIP | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Perform process review | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Plan required process improvements. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Implement process improvements. | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |
| Monitor and adjust process improvements | | | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q | 1-4Q |