| Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army | | | | | | | | | | DATE: February 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|

**APPROPRIATION/BUDGET ACTIVITY**
2040: *Research, Development, Test & Evaluation, Army*
BA 5: *Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**
PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*

| COST ($ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Program Element | 21.737 | 28.785 | 34.209 | 65.200 | 99.409 | 35.495 | 22.464 | 16.598 | 19.159 | Continuing | Continuing |
| 126: *FAAD C2 ED* | 2.902 | 3.694 | 8.262 | 0.000 | 8.262 | 9.772 | 3.642 | 3.467 | 3.479 | Continuing | Continuing |
| 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* | 9.226 | 15.431 | 19.227 | 0.000 | 19.227 | 15.586 | 8.756 | 13.131 | 15.680 | Continuing | Continuing |
| 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* | 9.609 | 9.660 | 6.720 | 65.200 | 71.920 | 10.137 | 10.066 | 0.000 | 0.000 | Continuing | Continuing |

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

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Fires Brigades and Divisions. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. AMDPCS has three major components:(1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational air picture. AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area. AMDWS is also the Net-centric interface to BC for all components of the AMD force. AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement; (2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;(3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace (including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs) to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons (Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms). Unique FAAD C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army divisions and below. System software will provide target data

| **Exhibit R-2**, **RDT&E Budget Item Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY** 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE** PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | |

and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. A small portion of RDTE funding is dedicated to SLAMRAAM C2 threshold requirements. FAAD C2 is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat System (FCS). Counter-Rockets, Artillery and Mortar (C-RAM) is a spiral Initiative Non-Developmental program initiated by the Army Chief of Staff in response to Iraqi threat and twice validated theater ONS. The primary mission of the C-RAM program is to develop, procure, field and maintain a system of systems that can detect rocket, artillery or mortar launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. C-RAM utilizes a system of systems (SoS) approach, and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems and a modified U.S. Navy intercept system, with a low cost commercial off-the-shelf (COTS) warning system and wireless local area network. The system will be fielded to various fixed or sites, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN), via various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond and Protect decisions.

**B. Program Change Summary ($ in Millions)**

|  | **FY 2009** | **FY 2010** | **FY 2011 Base** | **FY 2011 OCO** | **FY 2011 Total** |
|---|---|---|---|---|---|
| Previous President's Budget | 22.340 | 28.936 | 38.966 | 0.000 | 38.966 |
| Current President's Budget | 21.737 | 28.785 | 34.209 | 65.200 | 99.409 |
| Total Adjustments | -0.603 | -0.151 | -4.757 | 65.200 | 60.443 |
| • Congressional General Reductions | | -0.151 | | | |
| • Congressional Directed Reductions | | 0.000 | | | |
| • Congressional Rescissions | 0.000 | 0.000 | | | |
| • Congressional Adds | | 0.000 | | | |
| • Congressional Directed Transfers | | 0.000 | | | |
| • Reprogrammings | 0.000 | 0.000 | | | |
| • SBIR/STTR Transfer | -0.603 | 0.000 | | | |
| • Adjustments to Budget Years | 0.000 | 0.000 | -4.757 | 65.200 | 60.443 |

**Change Summary Explanation**

Change Summary Explanations: Funding - FY 2011: Anticipated Congressional increase to support Overseas Contingency Operation efforts for the Counter-Rocket, Artillery and Mortar (C-RAM) system.

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | | | | | | | | | | **DATE:** February 2010 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | | | | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | | | | **PROJECT**<br>126: *FAAD C2 ED* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|

| COST ($ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 126: *FAAD C2 ED* | 2.902 | 3.694 | 8.262 | 0.000 | 8.262 | 9.772 | 3.642 | 3.467 | 3.479 | Continuing | Continuing |
| Quantity of RDT&E Articles | | | | | | | | | | | |

## A. Mission Description and Budget Item Justification

The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information; the common tactical air picture; and command, control, and intelligence information to all Maneuver Air and Missile Defense (MAMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). The FAAD C2 system provides this mission capability by integrating dynamic FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), Joint Tactical Terminal (JTT), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control Systems (AWACS), Sentinel radar, and the Army Battle Command System (ABCS) architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT, Theater High-Altitude Area Defense (THAAD), Medium Extended Air Defense System (MEADS), and the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) by fusing sensor data to create a scalable and filterable Single Integrated Air Picture (SIAP) and common tactical picture. The system software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Stryker Brigade Combat Teams (SBCT), Brigade Combat Teams (BCTs), and Division Headquarters as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to MAMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated ARNG MAMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.Program funding enables fielding of equipment to the current force to support the Army's Program Objective to rapidly respond to immediate threats to Soldiers, identifies promising technologies, procures and integrates those capabilities for deployed forces in the same year. As capability gaps are identified by deployed forces, this program provides the ability for the Army to procure high priority/high leverage technology from industry during the same year, with the highest priority going to candidates that cover a multitude of gap areas. Program funding provides a method to rapidly keep pace with leading edge technologies and maintain interoperability and backwards compatibility caused by improvement to other system components (upgrade from common hardware version 2 to 3 and EPLRS enhancements).In support of the Global War on Terrorism, FAAD C2 systems are in MAMD units and ADAM Cells deployed to Iraq and Afghanistan. These FAAD systems are critical in providing the local air picture to supported units and higher headquarters. FAAD C2 systems will also provide target tracks and weapon controls for the initial C-RAM capability deployed to Iraq.

## B. Accomplishments/Planned Program ($ in Millions)

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | | | | DATE: February 2010 |
|---|---|---|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |
|---|---|---|

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #1<br><br>Support FAAD C2 software development for new Air and Missile Defense Composite Battalions, including unique software enhancements in support of Homeland Defense and security accreditation upgrades. Integrate Sentinel radar Enhanced Target, Range and Classification (ETRAC). Continue integration of interfaces for the Joint Tactical Terminal (JTT).  Incorporate IFF modes 1,2 and 3 (active decode) capabilities.<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 0.000 | 3.140 | 8.262 | 0.000 | 8.262 |
| Program #2<br><br>Implement software modifications necessary for Internet Protocol version 6 (IPv6).<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010 | 2.902 | 0.431 | 0.000 | 0.000 | 0.000 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>126: *FAAD C2 ED* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #3<br><br>Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 0.000 | 0.123 | 0.000 | 0.000 | 0.000 |
| Accomplishments/Planned Programs Subtotals | 2.902 | 3.694 | 8.262 | 0.000 | 8.262 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • Ord. #1: *OPA 2, AD5050 - FAAD C2* | 7.467 | 8.263 | 42.511 | 0.000 | 42.511 | 20.364 | 24.894 | 4.806 | 4.794 | Continuing | Continuing |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |

UNCLASSIFIED

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • Ord. #2: *Spares (BS9702) - FAAD C2* | | | | | | | | | | | |

**D. Acquisition Strategy**

The FAAD C2 acquisition strategy relies on evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies.  The concept of evolutionary software development was followed in Blocks I, II, and III.  Left to be completed is the Implementation of IPv6.

**E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army | | DATE: February 2010 |
|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |
|---|---|---|

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 Cost | FY 2010 Award Date | FY 2011 Base Cost | FY 2011 Base Award Date | FY 2011 OCO Cost | FY 2011 OCO Award Date | FY 2011 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northrop Grumman/TRW, BLK I | C/CPIF | Carson CA | 176.461 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| Northrop Grumman/TRW, BLK II | SS/CPIF | Carson CA | 32.206 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| Northrop Grumman/TRW, BLK III | SS/CPIF | Carson CA | 106.360 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| Northrop Grumman/TRW | SS | Carson CA | 13.659 | 0.329 | | 0.757 | | 0.000 | | 0.757 | Continuing | Continuing | 0 |
| Northrop Grumman | C | Nothing entered for Activity and Location. Location could not be determined. | 5.045 | 2.173 | | 5.002 | | 0.000 | | 5.002 | Continuing | Continuing | 0 |
| Program Management Administration | C | Various Location could not be determined. | 38.289 | 0.286 | | 0.658 | | 0.000 | | 0.658 | Continuing | Continuing | 0 |
| Sentinel GBS | C | Huntsville AL | 3.791 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| JTIDS | C | Ft. Monmouth NJ | 6.000 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| ABCS SE&I | C | Ft Monmouth NJ | 0.346 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| Software Engineering | C/Various | Various Location could not be determined. | 20.945 | 0.249 | | 0.572 | | 0.000 | | 0.572 | Continuing | Continuing | 0 |
| | C/Various | Variuos | 83.842 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army | | DATE: February 2010 |
|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |
|---|---|---|

## Product Development ($ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| C-RAM Sense, Warn & Intercept | | Location could not be determined. | | | | | | | | | | | |
| **Subtotal** | | | 486.944 | 3.037 | | 6.989 | | 0.000 | | 6.989 | | | 0.000 |

**Remarks**

## Test and Evaluation ($ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| ADATD | C | Ft Bliss TX | 12.617 | 0.100 | | 0.229 | | 0.000 | | 0.229 | Continuing | Continuing | 0 |
| RTTC | C | WSMR NM | 2.947 | 0.000 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 0 |
| AATD | C | Ft Eustis VA | 0.372 | 0.023 | | 0.053 | | 0.000 | | 0.053 | Continuing | Continuing | 0 |
| ATEC | C | Alexandria VA | 2.270 | 0.096 | | 0.221 | | 0.000 | | 0.221 | Continuing | Continuing | 0 |
| Yuma Proving Ground | C | Yuma AZ | 8.229 | 0.334 | | 0.770 | | 0.000 | | 0.770 | Continuing | Continuing | 0 |
| **Subtotal** | | | 26.435 | 0.553 | | 1.273 | | 0.000 | | 1.273 | | | 0.000 |

**Remarks**

**Exhibit R-3**, **RDT&E Project Cost Analysis:** PB 2011 Army | **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE | PROJECT |
|---|---|---|
| 2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | 126: *FAAD C2 ED* |

| | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 513.379 | 3.590 | | 8.262 | | 0.000 | | 8.262 | | | 0.000 |

**Remarks**

| **Exhibit R-4**, **RDT&E Schedule Profile:** PB 2011 Army | **DATE:** February 2010 |
|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |
|---|---|---|

| | FY 2009 | | | | FY 2010 | | | | FY 2011 | | | | FY 2012 | | | | FY 2013 | | | | FY 2014 | | | | FY 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| V5.4B Materiel Release | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| V5.5B Materiel Release | | | | | | | | | | | | | # | | | | | | | | | | | | | | | |
| IFPC / FAAD C2 SW Materiel Release | | | | | | | | # | | | | | | | | | | | | | | | | | | | | |
| V5.5C Materiel Release | | | | | | | | | | | | | | | | | | # | | | | | | | | | | |
| Software Upgrades for local Sensor Interfaces (Sentinel) | | | # | # | # | # | # | # | # | # | # | # | # | | | | | | | | | | | | | | | |
| NCR-IADS Phase II Operational Test/Operational User Evaluation, V5.4B-11.2p1 | | | | # | | | | | | | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Operational Assessment | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Initial Operation Test & Evaluation | | | | | | | | | | | # | | | | | | | | | | | | | | | | | |

| Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army | | | | DATE: February 2010 |

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>126: *FAAD C2 ED* |

## Schedule Details

| Event | Start | | End | |
|---|---|---|---|---|
| | Quarter | Year | Quarter | Year |
| V5.4B Materiel Release | 3 | 2010 | 3 | 2010 |
| V5.5B Materiel Release | 1 | 2012 | 1 | 2012 |
| IFPC / FAAD C2 SW Materiel Release | 4 | 2010 | 4 | 2010 |
| V5.5C Materiel Release | 1 | 2013 | 1 | 2013 |
| Software Upgrades for local Sensor Interfaces (Sentinel) | 4 | 2009 | 3 | 2012 |
| NCR-IADS Phase II Operational Test/Operational User Evaluation, V5.4B-11.2p1 | 4 | 2009 | 4 | 2009 |
| IFPC Increment I Operational Assessment | 3 | 2010 | 3 | 2010 |
| IFPC Increment I Initial Operation Test & Evaluation | 3 | 2011 | 3 | 2011 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | | | | | | | | | DATE: February 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |
|---|---|---|

| COST ($ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* | 9.226 | 15.431 | 19.227 | 0.000 | 19.227 | 15.586 | 8.756 | 13.131 | 15.680 | Continuing | Continuing |
| Quantity of RDT&E Articles | | | | | | | | | | | |

## A. Mission Description and Budget Item Justification

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons.  AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Fires Brigades and Divisions.   AMDPCS systems also provide air defense capabilities to Homeland Defense systems.  The development of ADAM Cells is essential in fulfilling the Army's Modularity requirement.   ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities.  They also provide the interoperability link with Joint, multinational and coalition forces.  AMDPCS components are vital in the transformation of ADA units and the activation of the Maneuver Air & Missile Defense (MAMD) Composite Battalions.  AMDPCS has three major components:(1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational air picture.  AMDWS provides the Battle Command (BC) capabilities embedded within the Warfighter Mission area.  AMDWS is also the Net-centric interface to BC for all components of the AMD force.  AMDWS provides an interoperability link to multinational air defense forces IAW Annex C to a Joint US/NATO Air Defense Agreement;(2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for Air and Missile Defense forces;(3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.
In support of the Global War on Terrorism (GWOT), AMDWS and ADSIs are vital components of the AMDPCS shelter systems fielded to ADAM Cells that have deployed to Iraq and Afghanistan.  In addition, these components have also been integrated into non-ADA higher headquarters such as the Coalition Forces Land Component Command (CFLCC).  AMDWS is a critical component in the integration and fielding of a Counter-Rocket, Artillery and Mortar (C-RAM) capability to Operating Bases in Iraq and elsewhere.  In support of Homeland Defense missions, the AMDWS has been integrated as the Force Operations component into the Joint Service/Air Force architecture.  These AMDPCS systems provide the common tactical air picture, a major component of the Common Operating Picture (COP), and are critical to the development and planning of offensive and defensive operations.FY11 funds the development, software engineering, testing and certificiation of the AMDWS, ADSI, and sheltered subsystem software as described below.

## B. Accomplishments/Planned Program ($ in Millions)

Army

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #1<br><br>Continue AMDWS development and support of LANDWARNET/Battle Command Framework. Complete AMDWS software engineering and development consistent with Software Block 2, 2+ and 3 requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Continue AMDWS software development and rehost onto emerging light/laptop common hardware systems. Continue integration of the PATRIOT Air Defense system Tactical Planner (PTP) and the Theater Battle Management Core Systems (TBMCS). Initiate development of the SLAMRAAM, JLENS, MEADS and Joint Theater Battle Operations Net-Centric Environment interfaces. Continue supporting the Air Force Joint Tactical Air and Missile Defense (JTAMD), and support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems. Continue AMDWS within the Capability Set management Process, while working to implement the Unified Battle Command SoS approach.<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 5.716 | 9.842 | 12.134 | 0.000 | 12.134 |
| Program #2<br><br>Continue ADSI software engineering and development in software versions 14.1.1, 15, and 15.1 including development of capabilities for TAC View Situational Awareness, with air control support, scenario generation | 1.050 | 1.706 | 2.121 | 0.000 | 2.121 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| and 3-dimensional capability, full TADIL-J, Joint Range Extension Application Protocols (JREAP) for link 16 messages, MIDS TADIL-J connectivity, and Windows XP Pro and LINUX Realtime.<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | | | | | |
| Program #3<br><br>Continue engineering, development, test and evaluation of the AMDPCS shelter subsystem Objective configurations; continue evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems.<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base | 1.668 | 2.539 | 3.370 | 0.000 | 3.370 |

Army

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #4<br><br>Continue software system certification testing, accreditation, and approval of Authority-to-Operate for the various software systems; continue Army and Joint integration and interoperability assessments.<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 0.792 | 1.163 | 1.602 | 0.000 | 1.602 |
| Program #5<br><br>Small Business Innovative Research/Small Business Technology Transfer Programs.<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010 | 0.000 | 0.181 | 0.000 | 0.000 | 0.000 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | | | | | |
| Accomplishments/Planned Programs Subtotals | 9.226 | 15.431 | 19.227 | 0.000 | 19.227 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • Ord. #1: *OPA, AD 5070 - AMDPCS* | 34.848 | 62.242 | 57.038 | 0.000 | 57.038 | 23.591 | 28.848 | 25.226 | 24.681 | Continuing | Continuing |

**D. Acquisition Strategy**

The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies.  The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades.  AMDPCS is being developed for both the Army's Active and Reserve components.

**E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

## Product Development ($ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Northrop Grumman/TRW | SS/CPIF | Huntsville AL | 60.571 | 9.121 | | 12.086 | | 0.000 | | 12.086 | Continuing | Continuing | 0 |
| ULTRA Electronics, ADSI | SS/CPIF | Austin TX | 6.026 | 0.219 | | 0.281 | | 0.000 | | 0.281 | Continuing | Continuing | 0 |
| Program Management Administration | C/Various | Various Location could not be determined. | 32.783 | 4.990 | | 4.999 | | 0.000 | | 4.999 | Continuing | Continuing | 0 |
| ABCS SE&I | C | Ft Monmouth NJ | 0.619 | 0.000 | | 0.000 | | 0.000 | | 0.000 | 0 | .619 | 0 |
| Software Engineering | C/Various | Various Location could not be determined. | 8.624 | 0.919 | | 1.730 | | 0.000 | | 1.730 | Continuing | Continuing | 0 |
| **Subtotal** | | | 108.623 | 15.249 | | 19.096 | | 0.000 | | 19.096 | | | 0.000 |

**Remarks**

## Test and Evaluation ($ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Certification | C | JITC Ft Huachuca, AZ | 0.753 | 0.053 | | 0.073 | | 0.000 | | 0.073 | Continuing | Continuing | 0 |
| | C | CTSF | 1.192 | 0.030 | | 0.058 | | 0.000 | | 0.058 | Continuing | Continuing | 0 |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 Cost | FY 2010 Award Date | FY 2011 Base Cost | FY 2011 Base Award Date | FY 2011 OCO Cost | FY 2011 OCO Award Date | FY 2011 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Interoperability Assessment | | Ft. Hood, TX | | | | | | | | | | | |
| **Subtotal** | | | 1.945 | 0.083 | | 0.131 | | 0.000 | | 0.131 | | | 0.000 |

**Remarks**

| | Total Prior Years Cost | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 110.568 | 15.332 | 19.227 | 0.000 | 19.227 | | | 0.000 |

**Remarks**

Army

| Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army | | DATE: February 2010 |
|---|---|---|

**APPROPRIATION/BUDGET ACTIVITY**
2040: *Research, Development, Test & Evaluation, Army*
BA 5: *Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**
PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*

**PROJECT**
146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)*

| | FY 2009 | | | | FY 2010 | | | | FY 2011 | | | | FY 2012 | | | | FY 2013 | | | | FY 2014 | | | | FY 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| AMDWS V6.4.2 FMR | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| AMDWS V6.5.2 FMR (CS 13-14) | | | | | | | | | | | | | | | | # | | | | | | | | | | | | |
| ATO | | | # | | | | | | | | | | | | | | | | | | | | | | | | | |
| AMDWS V6.5 FMR | | | | | | | | # | | | | | | | | | | | | | | | | | | | | |
| AMDWS V6.5.3 FMR (CS 15-16) | | | | | | | | | | | | | | | | | | | | | | | # | | | | | |
| No label was entered | | | | | | | | # | # | # | # | # | # | # | # | | | | | | | | | | | | | |
| No label was entered - 2 | | | | | | | | | | | | | | | | # | # | # | # | # | # | # | # | | | | | |
| AMDWS AMD Interfaces : Patriot - C2BMC - THAAD- JLENS - SLAMRAAM - MEADS- TBMCS | | | | | | | | | | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # |
| ADA BDE & ADAM Cell Technology Refresh | | | | | | | | | | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # |
| ADSI Migration to Joint Common Data Link | | | | | | | | | | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # |
| C-RAM / ADAM Demo | | | | # | | | | | | | | | | | | | | | | | | | | | | | | |
| IFPC OA | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| IFPC IOTE | | | | | | | | | | # | | | | | | | | | | | | | | | | | | |
| EWF/TATD | | | # | | | | | | | | | | | | | | | | | | | | | | | | | |
| JPOW | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| EWF/TATD - 2 | | | | | | | | | | # | | | | | | | | | | | | | | | | | | |
| JPOW - 2 | | | | | | | | | | | | | | # | | | | | | | | | | | | | | |
| EWF/TATD - 3 | | | | | | | | | | | | | | | | | | | # | | | | | | | | | |
| JPOW - 3 | | | | | | | | | | | | | | | | | | | | | | | # | | | | | |

| Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army | DATE: February 2010 |
|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |
|---|---|---|

| | FY 2009 | | | | FY 2010 | | | | FY 2011 | | | | FY 2012 | | | | FY 2013 | | | | FY 2014 | | | | FY 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| EWF/TATD - 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | # | |

| Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army | DATE: February 2010 |
|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |
|---|---|---|

## Schedule Details

| Event | Start | | End | |
|---|---|---|---|---|
| | Quarter | Year | Quarter | Year |
| AMDWS V6.4.2 FMR | 3 | 2010 | 3 | 2010 |
| AMDWS V6.5.2 FMR (CS 13-14) | 4 | 2012 | 4 | 2012 |
| ATO | 3 | 2009 | 3 | 2009 |
| AMDWS V6.5 FMR | 4 | 2010 | 4 | 2010 |
| AMDWS V6.5.3 FMR (CS 15-16) | 4 | 2014 | 4 | 2014 |
| No label was entered | 4 | 2010 | 3 | 2012 |
| No label was entered - 2 | 4 | 2012 | 3 | 2014 |
| AMDWS AMD Interfaces : Patriot - C2BMC - THAAD- JLENS - SLAMRAAM - MEADS-TBMCS | 4 | 2011 | 4 | 2015 |
| ADA BDE & ADAM Cell Technology Refresh | 4 | 2011 | 4 | 2015 |
| ADSI Migration to Joint Common Data Link | 4 | 2011 | 4 | 2015 |
| C-RAM / ADAM Demo | 4 | 2009 | 4 | 2009 |
| IFPC OA | 3 | 2010 | 3 | 2010 |
| IFPC IOTE | 3 | 2011 | 3 | 2011 |
| EWF/TATD | 3 | 2009 | 3 | 2009 |
| JPOW | 3 | 2010 | 3 | 2010 |
| EWF/TATD - 2 | 3 | 2011 | 3 | 2011 |
| JPOW - 2 | 2 | 2012 | 2 | 2012 |
| EWF/TATD - 3 | 3 | 2013 | 3 | 2013 |

| Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army | | | | DATE: February 2010 | |
|---|---|---|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE | PROJECT |
|---|---|---|
| 2040: *Research, Development, Test & Evaluation, Army* <br> BA 5: *Development & Demonstration (SDD)* | PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | 146: *AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)* |

| Event | Start | | End | |
|---|---|---|---|---|
| | Quarter | Year | Quarter | Year |
| JPOW - 3 | 2 | 2014 | 2 | 2014 |
| EWF/TATD - 4 | 3 | 2015 | 3 | 2015 |

UNCLASSIFIED

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE | PROJECT |
|---|---|---|
| 2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

| COST ($ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* | 9.609 | 9.660 | 6.720 | 65.200 | 71.920 | 10.137 | 10.066 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | | | | | | | | | | | |

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

Counter-Rockets, Artillery and Mortar (C-RAM) is an evolutionary Non-Developmental program initiated by the Army Chief of Staff in response to Iraqi threat and twice validated theater ONS. The primary mission of the C-RAM program is to develop, procure, field and maintain a system of systems that can detect rocket, artillery or mortar launches; warn the defended area with sufficient time for personnel to take cover; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM current capability utilizes a system of systems (SoS) approach, and is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems and a modified U.S. Navy intercept system, with a low cost commercial off-the-shelf (COTS) warning system and wireless local area network. The system is currently fielded to fifteen sites, providing them correlated air and ground pictures and linking them to the Army Battle Command System (ABCS) and the Joint Defense Network (JDN), via various forms of communications to provide situational awareness and exchange of timely and accurate information to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond and Protect decisions. The fielding of the C-RAM SoS was accomplished through an incremental acquisition process driven by urgent operational needs, theater priorities and emerging capability requirements to provide counter-RAM capability to fielded forces. The C-RAM Program Office has fielded equipment to fifteen (15) Forward Operating Bases (FOBs) (Sense, Warn and Intercept to three (3) FOBs; Sense and Warn to twelve (12) additional FOBs). The C-RAM SoS approach was validated by a Proof of Principle demonstration in December 2004 and Army Test and Evaluation Command (ATEC) tests in Feb 05, Apr 05, Jul 05, Nov-Dec 05, Sep-Oct 06, Sep-Oct 08 and Oct 09. Current development efforts include the implementation of improvements and upgrades/test to fielded C-RAM and the initial development of Indirect Fire Protection Capability (IFPC) capabilities. C-RAM is the current program for the Iraq theater of operations with the capability to be added to the Afghanistan theater of operations in FY10. The follow-on program to address future requirements will be titled Indirect Fire Protection Capability (IFPC). In parallel with a Joint Fires Integration and Interoperability Team (JFIIT) led effort to develop JCIDS documemtation for IFPC program initiation, the Army is pursuing designation of IFPC as a Program of Record and establishment of a program office to provide materiel developer input to the JCIDS documentation.

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #1 | 1.717 | 1.738 | 0.000 | 0.000 | 0.000 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Test/demonstration support for new C-RAM capabilities<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #2<br><br>Develop Threat Evaluation and Weapons Assignment (TEWA) capabilities<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 2.710 | 2.539 | 0.000 | 0.000 | 0.000 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |
|---|---|---|

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #3<br><br>Integrate with Rapid Digital "Clearance of Fires"<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 1.993 | 1.912 | 0.000 | 0.000 | 0.000 |
| Program #4<br><br>Develop Advanced Defense Design System Exerciser<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 1.993 | 1.687 | 0.000 | 0.000 | 0.000 |

| Exhibit R-2A, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |
|---|---|---|

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #5<br><br>Support Joint, Interagency and Multi-national (JIM) interoperability (Common Link Integration Processing (CLIP) integration, communications improvement)<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 1.196 | 1.223 | 0.000 | 0.000 | 0.000 |
| Program #6<br><br>Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR)<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base | 0.000 | 0.306 | 0.000 | 0.000 | 0.000 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #7<br><br>C-RAM C2 CWMI/ Advanced User Interface<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 0.000 | 0.255 | 1.336 | 1.294 | 2.630 |
| Program #8<br><br>Field Artillery (FA) Integration and Testing<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010 | 0.000 | 0.000 | 0.000 | 5.260 | 5.260 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

|  | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #9<br><br>Air Defense (AD) Integration & Testing<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 0.000 | 0.000 | 0.000 | 6.036 | 6.036 |
| Program #10<br><br>Mobile Warn Subsystem Improvement (Mesh Network)<br><br>*FY 2009 Accomplishments:*<br>FY 2009 | 0.000 | 0.000 | 0.000 | 7.790 | 7.790 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |
|---|---|---|

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | | | | | |
| Program #11<br><br>LPWS Block 1B Baseline 2 Enhancements<br><br>*FY 2009 Accomplishments:*<br>FY 2009<br><br>*FY 2010 Plans:*<br>FY 2010<br><br>*FY 2011 Base Plans:*<br>FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>FY 2011 OCO | 0.000 | 0.000 | 0.000 | 4.520 | 4.520 |
| Program #12<br><br>Test Increment I Capability | 0.000 | 0.000 | 5.384 | 0.000 | 5.384 |

Army

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | | | DATE: February 2010 | |
|---|---|---|---|---|---|

| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |
|---|---|---|

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| *FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | | | | | |
| Program #13<br><br>  C-RAM C2 System Migration via MPU/MCU/3D<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 0.000 | 0.000 | 0.000 | 17.999 | 17.999 |
| Program #14 | 0.000 | 0.000 | 0.000 | 6.986 | 6.986 |

| **Exhibit R-2A**, **RDT&E Project Justification:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Digital "Clearance of Fires" for Respond<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | | | | | |
| Program #15<br><br>Advanced Sensor Correlation and Architecture<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 0.000 | 0.000 | 0.000 | 10.730 | 10.730 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Program #16<br><br>Scaleable and Disributed Control Architecture (SSWIR)<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 0.000 | 0.000 | 0.000 | 3.585 | 3.585 |
| Program #17<br><br>Distributed FC TEWA Capabilities (Tactical FC)<br><br>*FY 2009 Accomplishments:*<br>  FY 2009<br><br>*FY 2010 Plans:*<br>  FY 2010<br><br>*FY 2011 Base Plans:*<br>  FY 2011 Base<br><br>*FY 2011 OCO Plans:*<br>  FY 2011 OCO | 0.000 | 0.000 | 0.000 | 1.000 | 1.000 |

| Exhibit R-2A, RDT&E Project Justification: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | R-1 ITEM NOMENCLATURE<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | PROJECT<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**B. Accomplishments/Planned Program ($ in Millions)**

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---|---|---|---|---|
| Accomplishments/Planned Programs Subtotals | 9.609 | 9.660 | 6.720 | 65.200 | 71.920 |

**C. Other Program Funding Summary ($ in Millions)**

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • Ord. #1: *OPA 2 BZ0526-COUNTER-ROCKETS, ARTILLERY& MORTAR (C-RAM)* | 507.700 | 148.400 | 2.088 | 205.750 | 207.838 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |

**D. Acquisition Strategy**

The C-RAM program is following an evolutionary acquisition strategy for rapid acquisition of mature technology to the user. The approach will deliver capabilities in increments, recognizing up front the need for future improvements. The objective of the strategy is to balance needs and available capability with resources and put a robust capability to engage rockets, artillery, and mortars into the hands of the user quickly. Success will depend on continuous user feedback, consistent definition of capability needs, maturation of technology, and allocation of required resources. To achieve the evolutionary acquisition of C-RAM, the program director will collaborate and coordinate with the user, combat developer, tester, logistician, PEO C3T, and resource provider (e.g., G8). The program will follow the incremental development process (per DoDI 5000.02), where each increment is a military useful and supportable operational capability. The Capability Production Document (CPD) for IFPC Increment I (Warn for BCTs) is currently in 3-Star Staffing with an AROC planned 2QFY10. A Capability Development Document (CDD) will be developed for IFPC Increment II (Interceptor and upgrades to other IFPC functions as required) based on the results of the Analysis of Alternatives (AoA).

**E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

**Exhibit R-3**, **RDT&E Project Cost Analysis:** PB 2011 Army | **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE | PROJECT |
|---|---|---|
| 2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 Cost | FY 2010 Award Date | FY 2011 Base Cost | FY 2011 Base Award Date | FY 2011 OCO Cost | FY 2011 OCO Award Date | FY 2011 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northrop Grumman | C/CPFF | Carson CA | 0.000 | 2.113 | | 0.000 | | 0.000 | | 0.000 | Continuing | Continuing | 70.500 |
| Base: Northrop Grumman | C/CPIF | Carson CA | 0.000 | 5.855 | | 0.000 | | 36.127 | | 36.127 | Continuing | Continuing | 40.000 |
| Raytheon | C/TBD | Nothing entered for Activity and Location. Location could not be determined. | 0.000 | 0.000 | | 0.000 | | 7.513 | | 7.513 | Continuing | Continuing | 0 |
| Other | C/TBD | Nothing entered for Activity and Location. Location could not be determined. | 0.000 | 0.000 | | 0.000 | | 7.850 | | 7.850 | Continuing | Continuing | 0 |
| **Subtotal** | | | 0.000 | 7.968 | | 0.000 | | 51.490 | | 51.490 | | | 110.500 |

**Remarks**

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| OGA | C | Nothing entered for Activity and Location. Location could not be determined. | 0.000 | 0.000 | | 0.000 | | 9.597 | | 9.597 | Continuing | Continuing | 0 |
| **Subtotal** | | | 0.000 | 0.000 | | 0.000 | | 9.597 | | 9.597 | | | 0.000 |

**Remarks**

**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| OGA | C | Nothing entered for Activity and Location. Location could not be determined. | 0.000 | 0.000 | | 5.374 | | 4.113 | | 9.487 | Continuing | Continuing | 0 |
| **Subtotal** | | | 0.000 | 0.000 | | 5.374 | | 4.113 | | 9.487 | | | 0.000 |

**Remarks**

**Exhibit R-3**, **RDT&E Project Cost Analysis:** PB 2011 Army | **DATE:** February 2010

| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE | PROJECT |
|---|---|---|
| 2040: *Research, Development, Test & Evaluation, Army* | PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | 149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |
| BA 5: *Development & Demonstration (SDD)* | | |

## Management Services ($ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 Cost | FY 2010 Award Date | FY 2011 Base Cost | FY 2011 Base Award Date | FY 2011 OCO Cost | FY 2011 OCO Award Date | FY 2011 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Program management Administration | C | Various Location could not be determined. | 0.000 | 1.437 | | 1.346 | | 0.000 | | 1.346 | Continuing | Continuing | 0 |
| **Subtotal** | | | 0.000 | 1.437 | | 1.346 | | 0.000 | | 1.346 | | | 0.000 |

**Remarks**

| | Total Prior Years Cost | FY 2010 | | FY 2011 Base | FY 2011 OCO | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 0.000 | 9.405 | | 6.720 | 65.200 | 71.920 | | | 110.500 |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army | | DATE: February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

| | FY 2009 | | | | FY 2010 | | | | FY 2011 | | | | FY 2012 | | | | FY 2013 | | | | FY 2014 | | | | FY 2015 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| IFPC Increment I Army Requirements Oversight Council | | | | | # | | | | | | | | | | | | | | | | | | | | | | | |
| C-RAM / IFPC LPWS Spiral 5 Demonstration | | | # | # | | | | | | | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Operational Assessment | | | | | | | # | | | | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Milestone C | | | | | | | | # | | | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Initial Operational Test & Evaluation | | | | | | | | | | # | | | | | | | | | | | | | | | | | | |
| IFPC Increment I Full Rate Production | | | | | | | | | | | | # | | | | | | | | | | | | | | | | |
| IFPC Increment II Development | | | | | | | | | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | # | |

Army

| **Exhibit R-4A**, **RDT&E Schedule Details:** PB 2011 Army | | **DATE:** February 2010 |
|---|---|---|
| **APPROPRIATION/BUDGET ACTIVITY**<br>2040: *Research, Development, Test & Evaluation, Army*<br>BA 5: *Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**<br>PE 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev* | **PROJECT**<br>149: *COUNTER-ROCKETS, ARTILLERY & MORTAR (C-RAM) DVPMT* |

## Schedule Details

| Event | Start | | End | |
|---|---|---|---|---|
| | **Quarter** | **Year** | **Quarter** | **Year** |
| IFPC Increment I Army Requirements Oversight Council | 1 | 2010 | 1 | 2010 |
| C-RAM / IFPC LPWS Spiral 5 Demonstration | 3 | 2009 | 4 | 2009 |
| IFPC Increment I Operational Assessment | 3 | 2010 | 3 | 2010 |
| IFPC Increment I Milestone C | 4 | 2010 | 4 | 2010 |
| IFPC Increment I Initial Operational Test & Evaluation | 3 | 2011 | 3 | 2011 |
| IFPC Increment I Full Rate Production | 4 | 2011 | 4 | 2011 |
| IFPC Increment II Development | 2 | 2011 | 3 | 2015 |