| Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army | | | | | | | | | | | Date: February 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)* | | | | | R-1 Program Element (Number/Name)<br>PE 0603804A *I Logistics and Engineer Equipment - Adv Dev* | | | | | | | |
| **COST ($ in Millions)** | **Prior Years** | **FY 2015** | **FY 2016** | **FY 2017 Base** | **FY 2017 OCO** | **FY 2017 Total** | **FY 2018** | **FY 2019** | **FY 2020** | **FY 2021** | **Cost To Complete** | **Total Cost** |
| Total Program Element | - | 13.188 | 21.233 | 20.834 | - | 20.834 | 19.492 | 16.116 | 16.138 | 15.748 | Continuing | Continuing |
| 526: *Marine Orien Log Eq Ad* | - | 2.803 | 2.546 | 3.976 | - | 3.976 | 4.197 | 3.298 | 3.330 | 3.336 | Continuing | Continuing |
| G11: *Adv Elec Energy Con Ad* | - | 3.874 | 8.857 | 6.166 | - | 6.166 | 3.895 | 8.081 | 8.246 | 7.726 | Continuing | Continuing |
| G14: *Materials Handling Equipment - Ad* | - | 0.000 | 0.143 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| K39: *Field Sustainment Support Ad* | - | 0.514 | 1.875 | 2.629 | - | 2.629 | 2.261 | 2.351 | 1.714 | 1.761 | Continuing | Continuing |
| K41: *Water And Petroleum Distribution - Ad* | - | 3.409 | 3.764 | 3.662 | - | 3.662 | 4.773 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| VR8: *Combat Service Support Systems - Ad* | - | 2.588 | 4.048 | 4.401 | - | 4.401 | 4.366 | 2.386 | 2.848 | 2.925 | Continuing | Continuing |

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

This program element supports advanced component development and prototypes of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in bridging, electric power generators, material-handling, environmental control, shelter systems, cargo aerial delivery, field service systems, mortuary affairs equipment and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield and to provide for greater sustainment while reducing the logistics support burden. Army Watercraft funding supports initiatives to enhance the seaworthiness, safety, survivability, supportability, energy efficiency, environmental, regulatory compliance and reliability of existing systems.

| Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army | | | | | Date: February 2016 |
|---|---|---|---|---|---|
| Appropriation/Budget Activity<br>2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)* | | R-1 Program Element (Number/Name)<br>PE 0603804A *I Logistics and Engineer Equipment - Adv Dev* | | | |
| **B. Program Change Summary ($ in Millions)** | **FY 2015** | **FY 2016** | **FY 2017 Base** | **FY 2017 OCO** | **FY 2017 Total** |
| Previous President's Budget | 13.380 | 21.233 | 23.019 | - | 23.019 |
| Current President's Budget | 13.188 | 21.233 | 20.834 | - | 20.834 |
| Total Adjustments | -0.192 | 0.000 | -2.185 | - | -2.185 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.192 | - | | | |
| • Adjustments to Budget Years | - | - | -2.185 | - | -2.185 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>526 / *Marine Orien Log Eq Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 526: *Marine Orien Log Eq Ad* | - | 2.803 | 2.546 | 3.976 | - | 3.976 | 4.197 | 3.298 | 3.330 | 3.336 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

FY17 dollars in the amount of $4.221M continue to support project advanced component development, and prototype of equipment and sub-systems supporting the Army Watercraft mission to provide critical capabilities in support of Unified Land Operations (ULO), by extending the Commander's available maneuver space into and throughout the littorals, inland waterways and near coastal regions. Army watercraft equipment supports the conduct of riverine, Logistics Over The Shore (LOTS), Joint Logistics Over The Shore (JLOTS), inter and intratheater transport, movement and maneuver, mission command and sustainment, as identified in DODD 5100.01 (Functions of the Department of Defense and its Major Components). Army Watercraft exploit the inland waterways and littoral regions as waterborne maneuver and supply routes, conducting operations through littoral entry points (developed, undeveloped, and austere access points) and in non-permissive, and/or denied access scenarios. The Army uses a spectrum of Army Watercraft Systems, from heavy sustainment ocean going landing craft capable of intratheater and ship to shore transport and undeveloped beach or harbor access, to ocean-going and harbor utility tug boats and barge derricks for transport and denied port/salvage operations, and modular causeway systems to support LOTS/JLOTS. The funding supports initiatives to enhance the seaworthiness, safety, survivability, supportability, energy efficiency, environmental, regulatory compliance and reliability of existing systems. Funded efforts will advance critical gaps in these areas for the current fleet, while at the same time researching, developing and testing emergent technologies in a manner to support future acquisitions and future fleet planning. The funding supports our ability to be compliant with the National Defense Authorization Act of 1996 Section 312 and 502(6) of the Clean Water Act and compliance with Environmental Protection Agency (EPA) emission standards.

FY17 funding will primarily support the maturation of At Sea Transfer - Modular Warping Tug (MWT) Repower study and an (MWT) Electrical Standardization study. Additional requirements to support Energy and Efficiency Compliance, Uniform National Discharge Standards (UNDS) across the fleet and Force Protection for LSV.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** Army Watercraft Program Support | 0.162 | - | 0.574 | - | 0.574 |
| ***Description:*** PM/Matrix Salary Support and Analysis (i.e .AoA, Cost Analysis and WSTAT) | | | | | |
| ***FY 2015 Accomplishments:***<br>PM/Matrix Salary Support and Analysis | | | | | |
| ***FY 2017 Base Plans:*** | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| PM/Matrix Support includes PM and System Engineering oversight required to manage the program and provide contractor oversight. Salaries, Benefits, Travel, Personnel Training and other government costs are included for retaining a profession acquisition workforce. | | | | | |
| ***Title:*** Force Protection; lethal (CROWS) and non-lethal Escalation of Force (EoF)<br>***Description:*** AWS - Force Protection measure for the fleet which has limited defensive measures (i.e. CROWS and EoF)<br>***FY 2015 Accomplishments:***<br>Force Protection; lethal (CROWS) and non-lethal Escalation of Force (EoF) Development.<br>***FY 2016 Plans:***<br>Continue Force Protection - lethal (CROWS) and non-lethal Escalation of Force (EoF) development.<br>***FY 2017 Base Plans:***<br>Continue Force Protection, lethal (CROWS) and non-lethal (EoF) suite includes white light, eye safe laser, acoustic device and percussion grenades for LSV fleet. | 0.400 | 0.500 | 0.500 | - | 0.500 |
| ***Title:*** At Sea Transfer Development Projects<br>***Description:*** At Sea Transfer provides roll on and roll off capability from vessels; and causeway transport of vehicles and equipment.<br>***FY 2015 Accomplishments:***<br>At Sea Transfer development - Modular Causeway<br>***FY 2016 Plans:***<br>At Sea Transfer Development for vehicles to roll on roll off the vessels; and causeway transport.<br>***FY 2017 Base Plans:***<br>At Sea Transfer Development to include Modular Warping Tug (MWT) Standardization Project (ESTDSP) Study including Monthly Status Report, In Progress Reviews, Assessment of Solutions Report, and a Land Based Test site with drawings for the Solution. | 0.400 | 0.330 | 1.175 | - | 1.175 |
| ***Title:*** Energy Efficiency and Emissions Compliance<br>***Description:*** Energy Compliance, the main deliverables will include monthly reports, interim progress briefings and final progress review briefing. | 0.348 | 0.300 | 0.600 | - | 0.600 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***FY 2015 Accomplishments:***<br>Energy Compliance Standards - testing<br>***FY 2016 Plans:***<br>Energy Compliance Standards - testing<br>***FY 2017 Base Plans:***<br>Energy Efficiency and Emissions Compliance: Electrical System Technology Development and Standardization Project (ESTDSP) Study Plan, Monthly Status Report, a Monthly In Progress Reviews, Reports and Other AAS Documentation. | | | | | |
| ***Title:*** Environmental Compliance Uniform Discharge Standards (UNDS)<br>***Description:*** Environmental Compliance Development to develop material solutions and control for certain "liquid" discharges that are incidental to the normal operation of Armed Forces Vessels.<br>***FY 2015 Accomplishments:***<br>Environmental Compliance Technologies IAW evolving regulatory requirements.<br>Develop the corrosion prevention and control plan/language for the various program documents<br>***FY 2016 Plans:***<br>Funding for both Environmental and Corrosion support to develop the initial PESHE for Milestone B, participate in IPT meetings, review and provide input to all program documents, develop the corrosion prevention and control plan/language for the various program documents, as well as, the acquisition documents.<br>***FY 2017 Base Plans:***<br>Funding to continue identification of Environmental Compliance Technologies IAW evolving statutory and regulatory requirements. Support from Navy UNDS experts. | 0.537 | 0.916 | 1.127 | - | 1.127 |
| ***Title:*** Army Watercraft Module Berthing (AWMB) Development<br>***Description:*** Accommodations for supercargo to support the soldier at sea.<br>***FY 2015 Accomplishments:***<br>AWMB for supercargo (passengers other than crew)<br>***FY 2016 Plans:*** | 0.200 | 0.500 | - | - | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Provides support to the passengers while at sea. | | | | | |
| ***Title:*** Future C4ISR Fleetwide Improvements<br>***Description:*** AWS - C4ISR<br><br>***FY 2015 Accomplishments:***<br>Future C4ISR Fleetwide Improvements reference to Maritime Navigational requirements | 0.206 | - | - | - | - |
| ***Title:*** Digital Integration Development<br>***Description:*** Digital Integration Development<br><br>***FY 2015 Accomplishments:***<br>Will help with the maintenance of the Digital Intergration.<br>Old Title: Watercraft - Digital Integration Development<br>New Title: Digital Integration Development | 0.250 | - | - | - | - |
| ***Title:*** PEO Management - Funding returned to Original Owner due to rescission<br>***Description:*** PEO Management - funds returned but remain on the funding line.<br><br>***FY 2015 Accomplishments:***<br>PEO Management, funds were returned to the Original source due to a rescission in the FY16 Appropriations Act for the Heavy Dump Truck. | 0.300 | - | - | - | - |
| **Accomplishments/Planned Programs Subtotals** | 2.803 | 2.546 | 3.976 | - | 3.976 |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • MA4501000 MODIFICATION KITS: *MA4501000 MODIFICATION KITS* | 34.922 | 3.912 | 6.276 | - | 6.276 | 4.018 | 4.864 | 8.343 | 8.463 | Continuing | Continuing |
| • MA4502000 INSTALLATION OF MODS: *MA4502000 INSTALLATION OF MODIFICATIONS* | 6.403 | 5.393 | 7.006 | - | 7.006 | 2.263 | 2.246 | 3.839 | 3.914 | Continuing | Continuing |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • 0604804A Log and Eng Equip EJ9: *0604804A Logistics and Engineer Equipment EJ9* | - | 10.066 | 18.338 | - | 18.338 | 14.522 | - | - | - | 0 | 42.926 |
| • M11101000 Army Watercraft Esp: *M11101000 Army Watercraft Esp* | 3.509 | 39.772 | 21.860 | - | 21.860 | 40.220 | 40.465 | 41.237 | 42.020 | Continuing | Continuing |
| • MA8900000 ITEMS LESS THAN $5.0M: *MA8900000 ITEMS LESS THAN $5.0M (FLOAT RAIL)* | - | 5.835 | 1.967 | - | 1.967 | 2.377 | 2.427 | 2.474 | 1.487 | Continuing | Continuing |

**Remarks**

Significant Achievements:
FY14: Completed Prototype proofing of CROWS II on LSV-2 during FY13 and FY14;
-Completed MSV(L) Analysis of Alternative (AoA)
FY15: Conducted extended user jury of CROWS II on LSV-2 in FY15.
-Completed LSV Load Analysis assessment
-Completed 13 of 14 UNDS Batch II requirements
-Completed prototyping and user jury of AWMB. Accommodates supercargo - passengers other than crew.
-Completed repower assessment for Modular Warping Tug
-Completed Whole System Trade Analysis Tool (WSTAT) for MSV(L)

**D. Acquisition Strategy**

Leverage government and public research centers (TARDEC and Carderock) and known public research institutes (Battelle) and associated contract mechanisms to prototype, test, and evaluate component technologies that may be applicable to the current and future Army Watercraft fleet.

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Army Watercraft Module, Berthing (AWMB) Development | C/ FFPLOE | PM Force Sustainment Systems : Natick, MA | 1.241 | 0.200 | Jul 2015 | 0.500 | Jun 2016 | - | | - | | - | Continuing | Continuing | Continuing |
| Force Protection, Escalation of Force (EoF) Development (i.e. CROWS) | C/ FFPLOE | NSWCDD : Crane, IN | 1.341 | 0.400 | Dec 2014 | 0.500 | Jan 2016 | 0.500 | Jan 2017 | - | | 0.500 | Continuing | Continuing | Continuing |
| At Sea Transfer Development (Warping Tug) | C/ FFPLOE | Battelle : Columbus, OH | 0.100 | 0.400 | Mar 2015 | 0.330 | | 1.175 | Mar 2017 | - | | 1.175 | Continuing | Continuing | Continuing |
| Energy Efficiency | C/ FFPLOE | Battelle : Columbus, OH | 0.518 | 0.348 | Jan 2015 | 0.300 | | 0.600 | Jan 2017 | - | | 0.600 | Continuing | Continuing | Continuing |
| Environmental Compliance (UNDS) | C/ FFPLOE | TARDEC, Carderock : Warren, MI and Maryland | 0.348 | 0.537 | Apr 2015 | 0.916 | | 1.127 | Jul 2017 | - | | 1.127 | Continuing | Continuing | Continuing |
| C4ISR Improvements (Fleetwide) | C/ FFPLOE | SPAWAR : Charleston, SC | 0.676 | 0.206 | Aug 2015 | - | | - | | - | | - | 0 | 0.882 | Continuing |
| Digital Integration Development | C/ FFPLOE | SPAWAR : Charleston, SC | 0.250 | 0.250 | Mar 2015 | - | | - | | - | | - | 0 | 0.500 | 0 |
| PEO Management | SS/BA | MIPR : MIPR | 0.000 | 0.300 | | - | | - | | - | | - | 0 | 0.300 | 0 |
| | | **Subtotal** | 4.474 | 2.641 | | 2.546 | | 3.402 | | - | | 3.402 | - | - | - |

**Support ($ in Millions)**

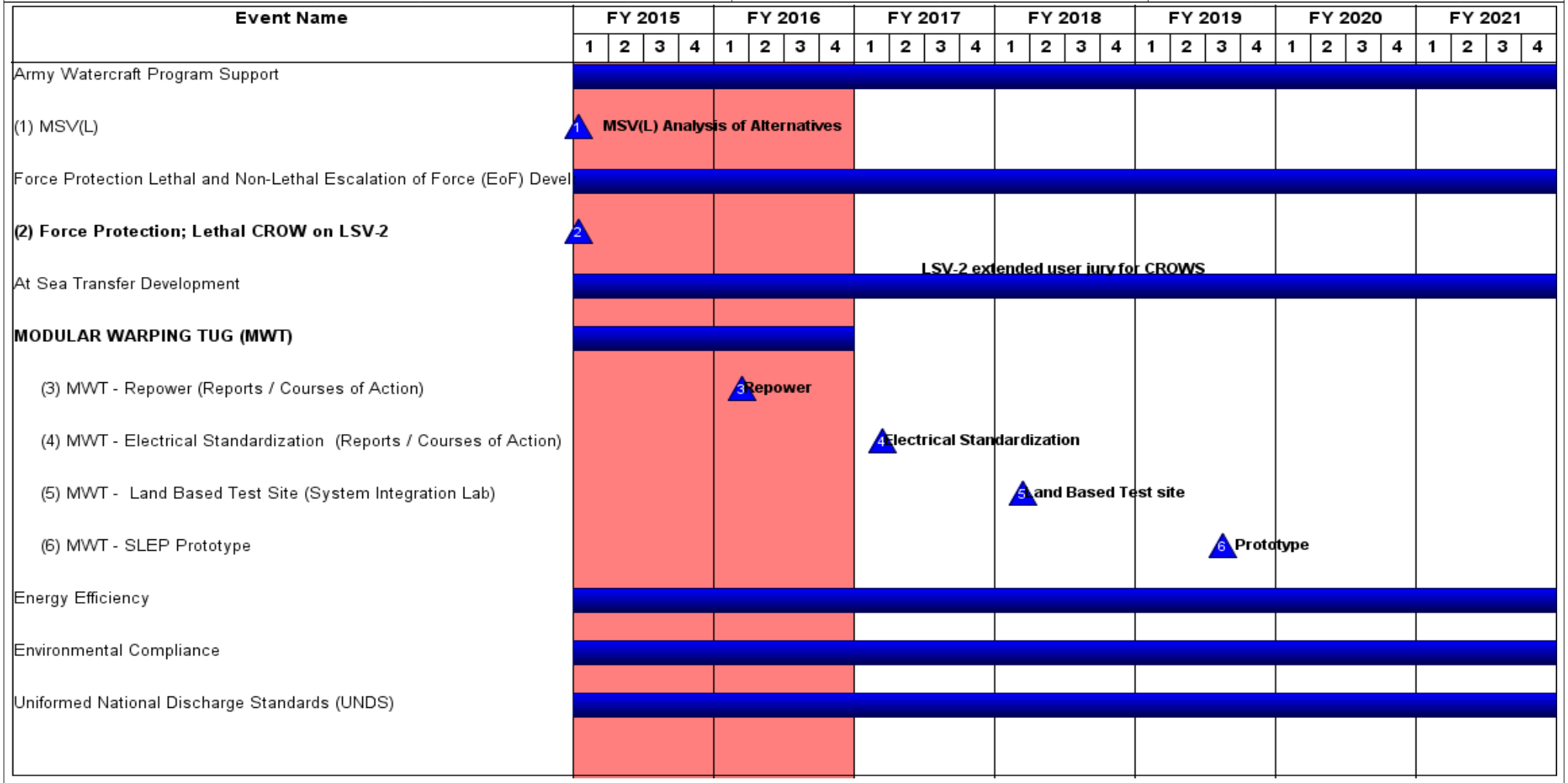
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Army Watercraft Program Support | MIPR | Detroit Arsenal PMs, TARDEC, ILSC. : Warren, MI | 0.050 | 0.162 | Oct 2014 | - | | 0.574 | Oct 2016 | - | | 0.574 | Continuing | Continuing | 0 |
| | | **Subtotal** | 0.050 | 0.162 | | - | | 0.574 | | - | | 0.574 | - | - | 0.000 |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>526 / *Marine Orien Log Eq Ad* | |

| | Prior Years | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 4.524 | 2.803 | | 2.546 | | 3.976 | | - | | 3.976 | - | - | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>526 / *Marine Orien Log Eq Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| Army Watercraft Program Support | 1 | 2015 | 4 | 2021 |
| MSV(L) | 1 | 2015 | 1 | 2015 |
| Force Protection Lethal and Non-Lethal Escalation of Force (EoF) Development | 1 | 2015 | 4 | 2021 |
| Force Protection; Lethal CROW on LSV-2 | 1 | 2015 | 1 | 2016 |
| At Sea Transfer Development | 1 | 2015 | 4 | 2021 |
| MODULAR WARPING TUG (MWT) | 1 | 2015 | 4 | 2016 |
| MWT - Repower (Reports / Courses of Action) | 1 | 2016 | 1 | 2016 |
| MWT - Electrical Standardization (Reports / Courses of Action) | 1 | 2017 | 1 | 2017 |
| MWT - Land Based Test Site (System Integration Lab) | 1 | 2018 | 1 | 2018 |
| MWT - SLEP Prototype | 3 | 2019 | 3 | 2019 |
| Energy Efficiency | 1 | 2015 | 4 | 2021 |
| Environmental Compliance | 1 | 2015 | 4 | 2021 |
| Uniformed National Discharge Standards (UNDS) | 1 | 2015 | 4 | 2021 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>G11 / *Adv Elec Energy Con Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G11: *Adv Elec Energy Con Ad* | - | 3.874 | 8.857 | 6.166 | - | 6.166 | 3.895 | 8.081 | 8.246 | 7.726 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

**Note**

Management and Distribution Control (MDC) was previously named Improved Power Distribution Illumination Systems Electrical (IPDISE).

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

The Tactical Electric Power (TEP) program was established by the Department of Defense to develop modernized, standard families of mobile electric power sources and power distribution systems for all Services throughout the Department of Defense. Project Manager Expeditionary Energy & Sustainment Systems (PM E2S2) derives concept and technology developments that will improve the performance, mobility, readiness and survivability of the next generation of tactical power sources in support of all Services. It supports initiatives that are essential to the development and fielding of modernized TEP sources from Watts to Megawatts level that comply with environmental statues and provide noise and signature-suppressed, energy-efficient, lightweight, deployable and reliable equipment. FY16 & FY17 funding will support test and evaluation of technologies for Small Tactical Electric Power (STEP), Mobile Electric Hybrid Power Sources (MEHPS), and Management and Distribution Control (MDC). Also funding will support a holistic Modeling and Simulation approach to the evaluation of Operational Energy (OE)-related impacts, systems, and improvements; with the vision of reducing Army energy dependency and demand, increasing systems and contingency bases energy efficiency, seeking alternative energy sources and supporting a culture of energy responsibility while sustaining or enhancing operational capabilities. This includes support of the Joint Operational Energy Initiative (JOEI). Out years will support investigation of general advancements in engine, power equipment, energy storage, renewable/alternative energy, and power distribution equipment that are applicable to current equipment and emerging requirements. In addition, an extensive analysis of commercial generator technology is planned to support requirements definition for the next family of tactical sets. Programs include costs for developing concept hardware and executing system evaluations at the Network Integration Evaluation (NIE) events at Ft. Bliss.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** Contract Activity | 0.800 | 4.857 | 3.066 | - | 3.066 |
| ***Description:*** Continue development of technology supporting the STEP program, MDC, and MEHPS. | | | | | |
| ***FY 2015 Accomplishments:***<br>Awarded contracts to develop various technologies related to TEP and power distribution/management across the DoD power spectrum. Specific efforts include STEP components, MEHPS components and MDC. Developed tools, systems and capability to provide holistic analysis of Operational Energy impacts, systems and improvements. | | | | | |
| ***FY 2016 Plans:*** | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Develop various technologies related to TEP and power distribution/management across the DoD power spectrum. Specific efforts will include STEP components, MEHPS components and MDC. Develop tools, systems and capability to provide holistic M&S analysis of Operational Energy impacts, systems and improvements.<br>***FY 2017 Base Plans:***<br>Develop various technologies related to TEP and power distribution/management across the DoD power spectrum. Specific efforts will include demo of metering and monitoring systems, energy storage and inverter systems, and MDC. Develop tools, systems and capability to provide holistic M&S analysis of Operational Energy impacts, systems and improvements. | | | | | |
| ***Title:*** Government System Test and Evaluation<br>***Description:*** Supports inhouse and external performance tests of concept hardware. Also supports evaluation of systems at Network Integration Evaluation (NIE).<br>***FY 2015 Accomplishments:***<br>Continued evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts were aimed at resolving technology gaps to meet Army User requirements. Efforts supported the TEP CPD. Specific efforts included performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Program also supported Rapid Equipping Force deployments of MEHPS concepts in support of Village Stability Operation. Program supports new equipment and concept demonstrations at NIE 15.2 and 16.1.<br>***FY 2016 Plans:***<br>Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the TEP CPD. Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Program also supports Type Classification efforts for improved Command Post infrastructure. Program supports new equipment and concept demonstrations at NIE 16.2.<br>***FY 2017 Base Plans:***<br>Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the TEP CPD. Specific efforts will include performance | 0.300 | 1.500 | 0.400 | - | 0.400 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| testing of hybrid/alternative energy power sources, open standards grid communications, small power sources, and intelligent power distribution/management systems. Program supports new equipment and concept demonstrations at NIE 17.2. | | | | | |
| ***Title:*** Other Contracts and Gov't agencies<br>***Description:*** Matrix engineering and analysis support for continued development of technology supporting the STEP program, MDC, and MEHP, as well as analysis and data management.<br>***FY 2015 Accomplishments:***<br>Evaluated and tested various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts included development of STEP, and evaluation of MEHPS and intelligent power systems, as well as support of NIE 15.1 and 16.1. Developed tools, systems and capability to provide holistic analysis of Operational Energy impacts, systems and improvements.<br>***FY 2016 Plans:***<br>Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the TEP CPD. Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Program also supports Type Classification efforts for improved Command Post infrastructure. Program supports new equipment and concept demonstrations at NIE 16.2.<br>***FY 2017 Base Plans:***<br>Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the TEP CPD. Specific efforts will include contract management and testing of small generator sets, hybrid/alternative energy power sources, and power distribution/management systems. Program supports new equipment and concept demonstrations at NIE 17.2. Includes oversight, analysis and management of Operational Energy-related impacts, systems and improvements to reduce Army's energy dependence and improve operational capabilities. | 1.554 | 1.000 | 1.400 | - | 1.400 |
| ***Title:*** Government Program Management<br>***Description:*** Continue development of technology supporting the STEP program, MDC and MEHPS.<br>***FY 2015 Accomplishments:*** | 1.220 | 1.500 | 1.300 | - | 1.300 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts were aimed at resolving technology gaps to meet Army User requirements. Efforts supported the STEP program and the TEP CPD. Specific efforts included development of small sets, MEHPS and intelligent power systems. Oversight, analysis and management of Operational Energy-related impacts, systems and improvements to reduce Army's energy dependence and improve operational capabilities.<br>***FY 2016 Plans:***<br>Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the TEP CPD. Specific efforts will include development of small sets, MEHPS and intelligent power systems. Oversight, analysis and management of Operational Energy-related impacts, systems and improvements to reduce Army's energy dependence and improve operational capabilities. Effort will also be focused on supporting Type Classification of AMMPS microgrid and power distribution components.<br>***FY 2017 Base Plans:***<br>Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the TEP CPD. Specific efforts will include support of MEHPS, STEP, and power MDC systems. Oversight, analysis and management of Operational Energy-related impacts, systems and improvements to reduce Army's energy dependence and improve operational capabilities. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 3.874 | 8.857 | 6.166 | - | 6.166 |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • 654804.194: *Logistics and Engineer Equipment - Eng Dev 194* | 4.309 | 8.822 | 13.676 | - | 13.676 | 15.295 | 5.458 | 7.110 | 0.497 | Continuing | Continuing |
| • MA9800: *OPA 3, Generators and Associated Eq. MA9800* | 117.850 | 166.356 | 145.027 | - | 145.027 | 134.532 | 143.249 | 131.191 | 132.384 | Continuing | Continuing |

**Remarks**

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |

**D. Acquisition Strategy**

Complete advanced development pre-milestone B technology assessments and analysis, and transition products to Engineering and Manufacturing Development (EMD) phase (Milestone B) and subsequent transition to production (Milestone C). Support concept development and demonstration efforts. Products and technologies supported include tactical power and energy sources, alternative/renewable energy systems, power distribution components, and power management and distribution control systems.

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>G11 / *Adv Elec Energy Con Ad* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Tactical Electric Power (STEP) Components | MIPR | PM-E2S2 : Fort Belvoir, VA | 0.433 | 0.100 | Dec 2014 | 0.200 | | - | | - | | - | Continuing | Continuing | Continuing |
| Hybrid Power Sources Components | MIPR | PM E2S2 : Ft. Belvoir, VA | 0.262 | 0.070 | Dec 2014 | 0.100 | | 0.200 | Dec 2016 | - | | 0.200 | Continuing | Continuing | Continuing |
| Power Management and Distribution Systems | MIPR | PM E2S2 : Ft. Belvoir, VA | 0.185 | 0.050 | Dec 2014 | 1.000 | | 0.700 | Dec 2016 | - | | 0.700 | Continuing | Continuing | Continuing |
| Operational Energy | MIPR | PM E2S2 : Fort Belvoir, VA | 0.000 | 1.000 | Dec 2014 | 0.200 | | 0.400 | Dec 2016 | - | | 0.400 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 0.880 | 1.220 | | 1.500 | | 1.300 | | - | | 1.300 | - | - | - |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Tactical Electric Power (STEP) Components | Various | CERDEC : Fort Belvoir, VA | 2.681 | 0.100 | Feb 2015 | 0.500 | | - | | - | | - | Continuing | Continuing | Continuing |
| Hybrid Power Sources Components | Various | Multiple Vendors : TBD | 1.565 | 0.100 | Apr 2015 | 0.500 | | 0.250 | Mar 2017 | - | | 0.250 | Continuing | Continuing | Continuing |
| Power Management and Distribution Systems | Various | CERDEC : Fort Belvoir, VA | 0.909 | 0.100 | Feb 2015 | 2.057 | | 2.066 | Mar 2017 | - | | 2.066 | Continuing | Continuing | Continuing |
| Operational Energy | TBD | TBD (FY15) : TBD (FY15) | 0.000 | 0.500 | Feb 2015 | 1.800 | | 0.500 | Mar 2017 | - | | 0.500 | Continuing | Continuing | Continuing |
| Metering and Monitoring Demo | Various | TBD : TBD | 0.000 | - | | - | | 0.250 | Mar 2017 | - | | 0.250 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 5.155 | 0.800 | | 4.857 | | 3.066 | | - | | 3.066 | - | - | - |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>G11 / *Adv Elec Energy Con Ad* | |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Tactical Electric Power (STEP) Components | MIPR | CERDEC : Fort Belvoir, VA | 1.306 | 0.200 | Dec 2014 | 0.200 | | - | | - | | - | Continuing | Continuing | Continuing |
| Hybrid Power Sources Components | MIPR | CERDEC : Fort Belvoir, VA | 0.965 | 0.164 | Dec 2014 | 0.100 | | 0.600 | Dec 2016 | - | | 0.600 | Continuing | Continuing | Continuing |
| Power Management and Distribution Control Systems | MIPR | CERDEC : Fort Belvoir, VA | 0.868 | 0.190 | Dec 2014 | 0.200 | | 0.600 | Dec 2016 | - | | 0.600 | Continuing | Continuing | Continuing |
| Operational Energy | MIPR | Dept of Energy Sandia National Labs : Washington DC | 0.000 | 1.000 | Dec 2014 | 0.500 | | 0.200 | Dec 2016 | - | | 0.200 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 3.139 | 1.554 | | 1.000 | | 1.400 | | - | | 1.400 | - | - | - |

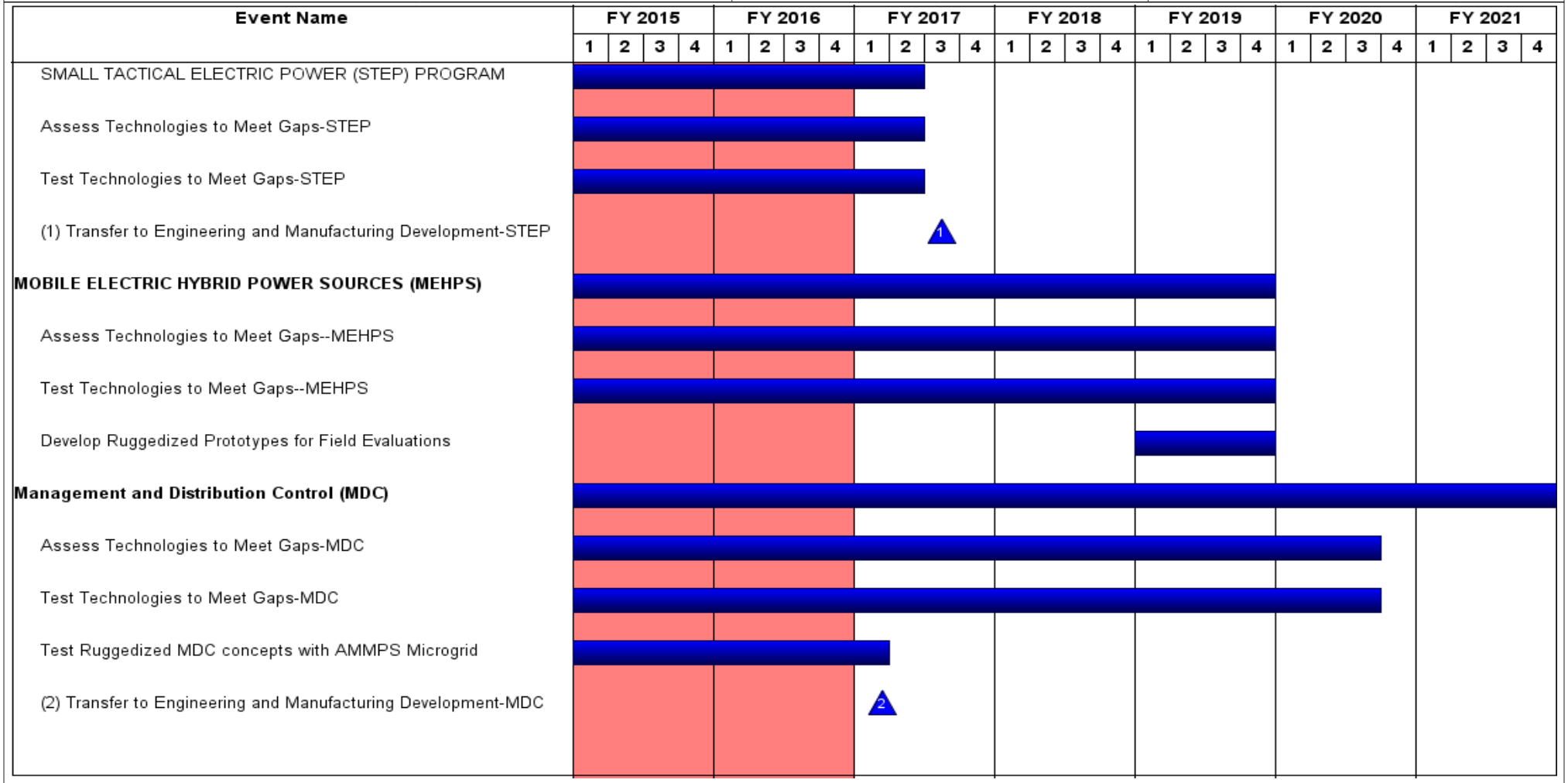
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Tactical Electric Power (STEP) Components | MIPR | CERDEC : Fort Belvoir,VA | 0.630 | 0.100 | Feb 2015 | 0.100 | | - | | - | | - | Continuing | Continuing | Continuing |
| Hybrid Power Sources Components | MIPR | CERDEC : Fort Belvoir, VA | 0.265 | 0.100 | Feb 2015 | 0.300 | | 0.200 | Mar 2017 | - | | 0.200 | Continuing | Continuing | Continuing |
| Power Management and Distribution Systems | MIPR | CERDEC : Fort Belvoir, VA | 0.397 | 0.100 | Feb 2015 | 1.100 | | 0.200 | Mar 2017 | - | | 0.200 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 1.292 | 0.300 | | 1.500 | | 0.400 | | - | | 0.400 | - | - | - |

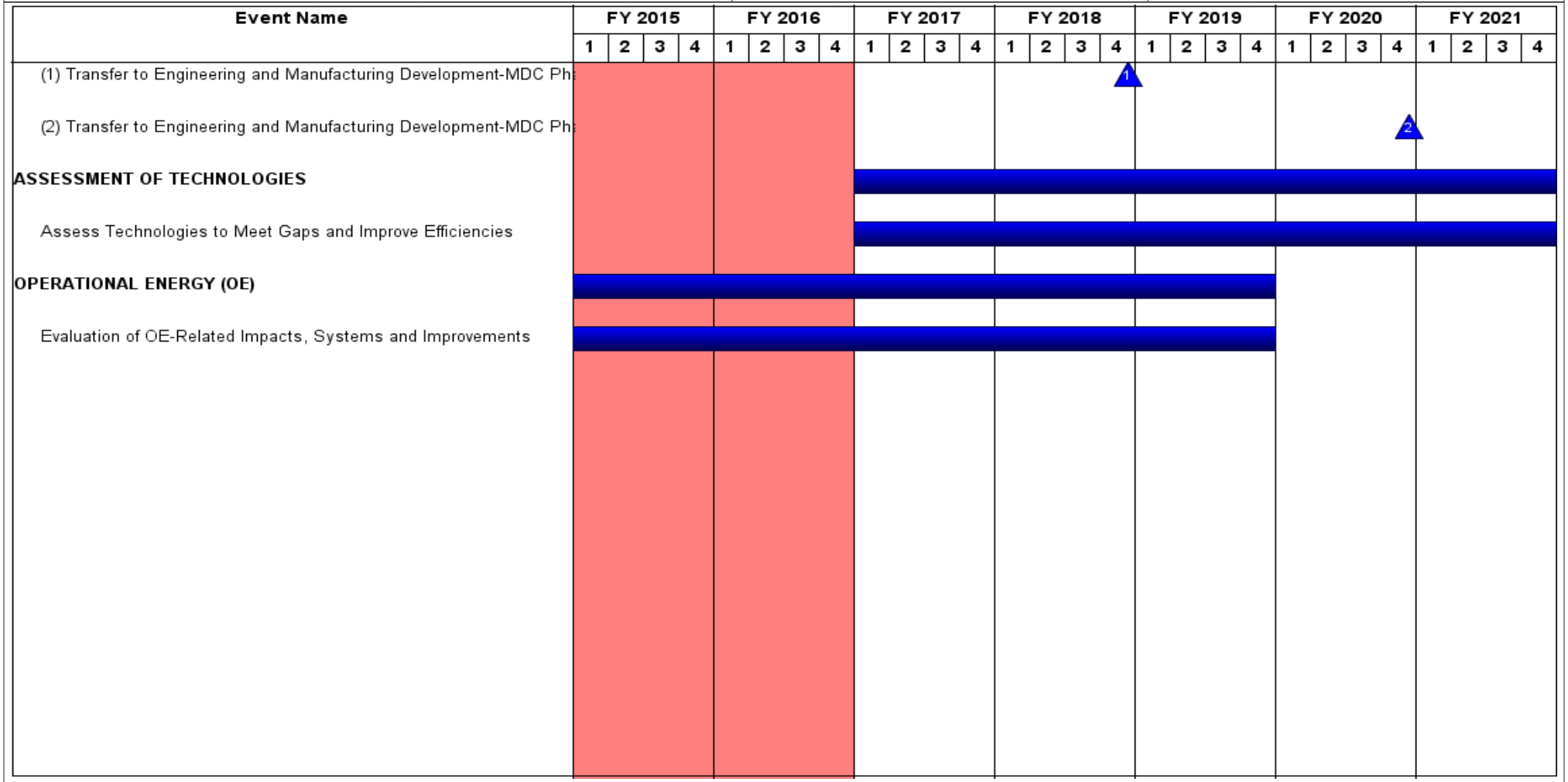
| | Prior Years | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 10.466 | 3.874 | | 8.857 | | 6.166 | | - | | 6.166 | - | - | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |



| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G11 / *Adv Elec Energy Con Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| SMALL TACTICAL ELECTRIC POWER (STEP) PROGRAM | 1 | 2008 | 2 | 2017 |
| Assess Technologies to Meet Gaps-STEP | 1 | 2008 | 2 | 2017 |
| Test Technologies to Meet Gaps-STEP | 1 | 2008 | 2 | 2017 |
| Transfer to Engineering and Manufacturing Development-STEP | 3 | 2017 | 3 | 2017 |
| MOBILE ELECTRIC HYBRID POWER SOURCES (MEHPS) | 1 | 2010 | 4 | 2019 |
| Assess Technologies to Meet Gaps--MEHPS | 1 | 2010 | 4 | 2019 |
| Test Technologies to Meet Gaps--MEHPS | 1 | 2010 | 4 | 2019 |
| Develop Ruggedized Prototypes for Field Evaluations | 1 | 2019 | 4 | 2019 |
| Management and Distribution Control (MDC) | 1 | 2010 | 4 | 2022 |
| Assess Technologies to Meet Gaps-MDC | 1 | 2010 | 3 | 2020 |
| Test Technologies to Meet Gaps-MDC | 1 | 2010 | 3 | 2020 |
| Test Ruggedized MDC concepts with AMMPS Microgrid | 1 | 2013 | 1 | 2017 |
| Transfer to Engineering and Manufacturing Development-MDC | 1 | 2017 | 1 | 2017 |
| Transfer to Engineering and Manufacturing Development-MDC Phase 2 | 4 | 2018 | 4 | 2018 |
| Transfer to Engineering and Manufacturing Development-MDC Phase 3 | 4 | 2020 | 4 | 2020 |
| ASSESSMENT OF TECHNOLOGIES | 1 | 2017 | 4 | 2022 |
| Assess Technologies to Meet Gaps and Improve Efficiencies | 1 | 2017 | 4 | 2022 |
| OPERATIONAL ENERGY (OE) | 1 | 2015 | 4 | 2019 |
| Evaluation of OE-Related Impacts, Systems and Improvements | 1 | 2015 | 4 | 2019 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>G14 / *Materials Handling Equipment - Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G14: *Materials Handling Equipment - Ad* | - | 0.000 | 0.143 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project supports component development and Material Handling Equipment (MHE) prototyping and stays abreast of emerging and available technologies to be integrated into military MHE to address identified capability gaps and warfighter objectives. This project enables the development of selected technologies and transition to system integration and development or production of MHE products. MHE includes Rough Terrain Forklifts, Rough Terrain Container Handlers (RTCH) and Cranes, as well as ancillary MHE equipment, to support distribution of critical supplies in the theater of operations.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** Driver Assist<br>***Description:*** Research and Demonstrate technologies which would enhance operations such as the inclusion of cameras, collision sensors and lifting aids.<br>***FY 2016 Plans:***<br>blank | - | 0.143 | - | - | - |
| **Accomplishments/Planned Programs Subtotals** | - | 0.143 | - | - | - |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • G41002: *5K Light Capacity Rough Terrain (LCRT) Forklift* | 14.392 | 27.982 | 2.307 | 0.846 | 3.153 | 17.999 | 18.391 | 17.759 | 20.240 | Continuing | Continuing |
| • R06701: *All Terrain Cranes* | - | - | 65.285 | - | 65.285 | 8.935 | 17.632 | 31.477 | 38.163 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

Procure prototype component items for engineering tests and demonstrations with subject matter experts. Conduct trades between cost and improved maintainability and environmental risk reduction. Process engineering change proposals, update technical manuals and training materials, and prepare supporting acquisition documents and data to procure new training aids. Develop additional capabilities for existing systems such as the LCRTF, RTCH, and ATLAS which will allow for

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G14 / *Materials Handling Equipment - Ad* |

improved safety, autonomous or semi automonous operation. Award contracts with vehicle or Autonomus System Developer/TARDEC Robotics to integrate existing technologies onto the platforms to allow for ease of operation or removal of the operator from vehicle. Testing will be conducted at Aberdeen Proving Grounds, MD.

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>G14 / *Materials Handling Equipment - Ad* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System Engineering/ Program Management | MIPR | TARDEC : Warren, MI | 0.022 | - | | - | | - | | - | | - | 0 | 0.022 | 0 |
| | | **Subtotal** | 0.022 | - | | - | | - | | - | | - | 0.000 | 0.022 | 0.000 |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field Maintenance Aids for MHE | TBD | Kalmar RT Center : Cibolo, TX | 0.465 | - | | - | | - | | - | | - | 0 | 0.465 | 0 |
| Driver Assist | TBD | TBD : TBD | 0.000 | - | | 0.143 | | - | | - | | - | 0 | 0.143 | 0 |
| | | **Subtotal** | 0.465 | - | | 0.143 | | - | | - | | - | 0.000 | 0.608 | 0.000 |

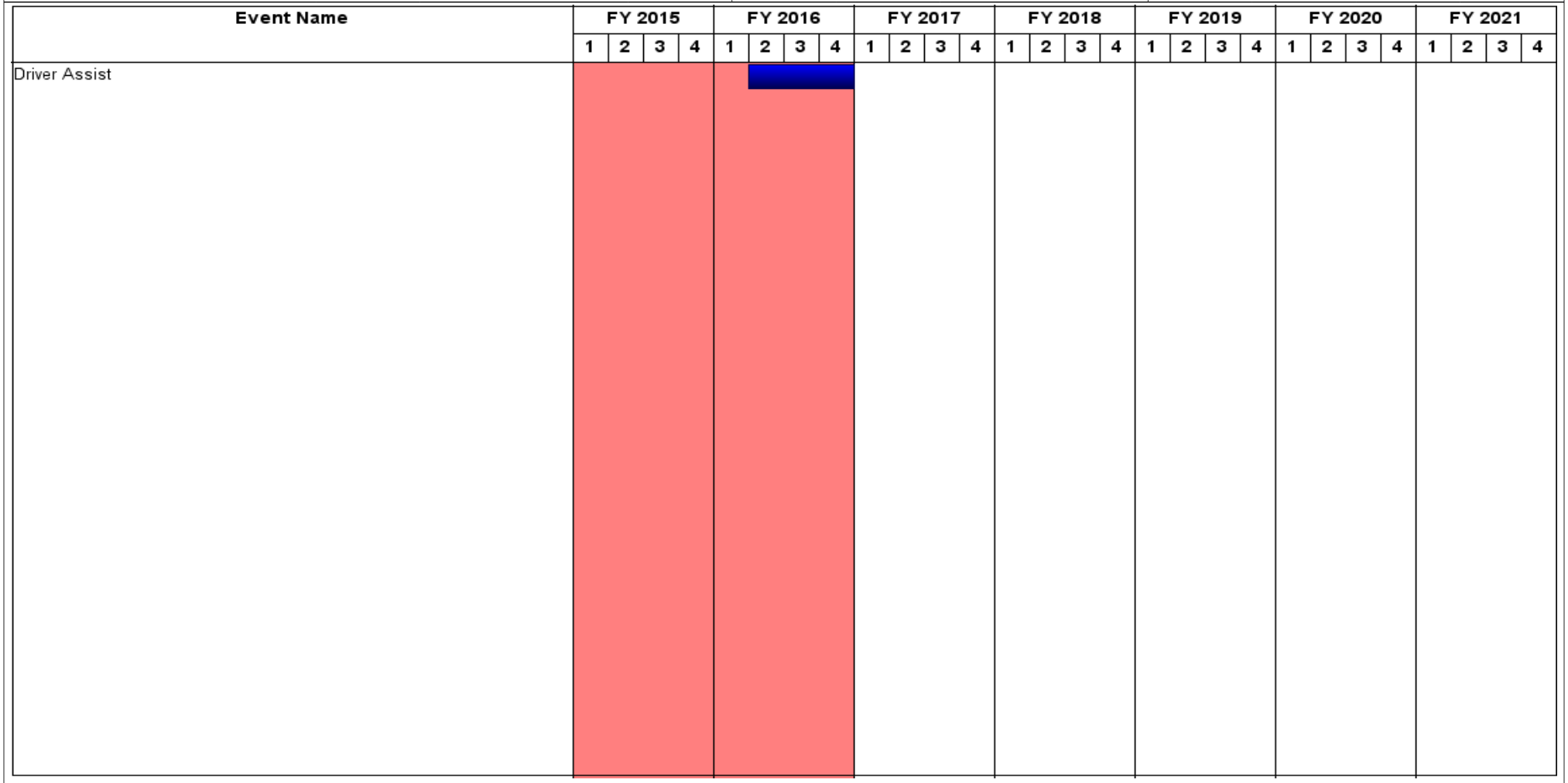
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field Maintenance Aids for MHE | TBD | Kalmar RT Center : Cibolo, TX | 0.028 | - | | - | | - | | - | | - | Continuing | Continuing | 0 |
| Baseline Fuel Efficiency of MHE Equipment | TBD | TBD : TBD | 0.248 | - | | - | | - | | - | | - | 0 | 0.248 | 0 |
| | | **Subtotal** | 0.276 | - | | - | | - | | - | | - | - | - | 0.000 |

| | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 0.763 | - | | 0.143 | | - | | - | | - | - | - | 0.000 |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G14 / *Materials Handling Equipment - Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>G14 / *Materials Handling Equipment - Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| Driver Assist | 2 | 2016 | 4 | 2016 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>K39 / *Field Sustainment Support Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K39: *Field Sustainment Support Ad* | - | 0.514 | 1.875 | 2.629 | - | 2.629 | 2.261 | 2.351 | 1.714 | 1.761 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project supports development of critical soldier support and sustainment systems for cargo aerial delivery capabilities. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project supports Advanced Component Development and Prototyping of Critical Distribution Capabilities which provide improved safety and accuracy while increasing survivability of aircraft, personnel, and equipment. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment through aerial delivery initiatives and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** Extracted High and Low Speed Container Delivery System (EHLSCDS)<br>***Description:*** Provides a high speed (230 knot), low altitude (375 ft AGL) capability for up to eight Container Delivery Systems (CDS) to enhance aircraft and aircrew safety while improving accuracy and reducing dispersion for receiving ground units.<br>***FY 2015 Accomplishments:***<br>Initiated EHLSCDS Design Validation (DV) testing.<br>***FY 2016 Plans:***<br>Complete EHLSCDS Design Validation (DV) testing, prepare for Milestone B and transition program into Engineering and Manufacturing Development (EMD). | 0.514 | 1.875 | - | - | - |
| ***Title:*** Sustainment Aerial Delivery Equipment (SADE)<br>***Description:*** SADE provides United States (US) and Joint Forces the ability to execute future movement and maneuver operations and conduct distributed supply and sustainment support. This includes incremental advancements of rotary wing, helicopter sling load, and aerial delivery capabilities, such as low cost cargo nets, auto hookup, long lines and airdrop capable multi load carousels. | - | - | 1.229 | - | 1.229 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K39 / *Field Sustainment Support Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***FY 2017 Base Plans:***<br>Conduct advanced component prototype design & fabrication on SADE Autoload Hookup with focus on reducing technology, engineering, integration, and life-cycle cost risk. Begin technology development demonstrations on prototype systems. | | | | | |
| ***Title:*** Joint Precision Airdrop System-2K Block 1 upgrade (JPADS-BLK1)<br>***Description:*** Supports increasing the technological and design maturity, testing, and integration of several key initiatives focused on: improved system accuracy and reliability in Global Positioning System (GPS) denied environments; collision avoidance; more precise position determination software; and improved Guidance Navigation and Control (GN&C) hardware.<br>***FY 2017 Base Plans:***<br>Conduct advanced component prototype design & fabrication on JPADS-2K Block 1 upgrade solutions with focus on reducing technology, engineering, integration, and life-cycle cost risk. Conduct technology development demonstrations to determine if identified JPADS-2K Block 1 upgrade solutions are feasible, affordable, and supportable; satisfy validated capability requirements; and have acceptable technical risk. | - | - | 1.400 | - | 1.400 |
| **Accomplishments/Planned Programs Subtotals** | 0.514 | 1.875 | 2.629 | - | 2.629 |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • OPA MA7806: *Precision Airdrop MA7806* | 4.919 | 2.890 | 4.298 | - | 4.298 | 2.167 | 2.178 | 2.219 | 2.282 | Continuing | Continuing |
| • RDT&E 654804.L39: *Field Sustainment Support ED 654804.L39* | 1.623 | 1.849 | 3.712 | - | 3.712 | 3.028 | 2.128 | 2.907 | 2.985 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

Accelerate Joint Precision Aerial Delivery System (JPADS) product improvements to transition to Production.

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K39 / *Field Sustainment Support Ad* |

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K39 / *Field Sustainment Support Ad* |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Management Support | Various | PM Force Sustainment Sys (FSS), Natick : Natick, MA | 5.732 | 0.050 | Oct 2014 | 0.575 | Oct 2015 | 0.429 | Oct 2016 | - | | 0.429 | Continuing | Continuing | Continuing |
| SBIR+STTR | TBD | Various : Various | 0.090 | - | | - | | - | | - | | - | 0 | 0.090 | 0 |
| | | **Subtotal** | 5.822 | 0.050 | | 0.575 | | 0.429 | | - | | 0.429 | - | - | - |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Extracted High and Low Speed Container Delivery System (EHLSCDS) | Various | Various : Various | 1.097 | 0.264 | Feb 2015 | 0.500 | Oct 2015 | - | | - | | - | Continuing | Continuing | Continuing |
| SADE | Various | Various : Various | 15.934 | - | | - | | 0.500 | Jun 2017 | - | | 0.500 | Continuing | Continuing | Continuing |
| JPADS Block 1 upgrade | Various | Various : Various | 1.300 | - | | - | | 0.500 | Dec 2016 | - | | 0.500 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 18.331 | 0.264 | | 0.500 | | 1.000 | | - | | 1.000 | - | - | - |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JPADS Block 1 upgrade | Various | Various : Various | 0.060 | - | | - | | 0.050 | Sep 2017 | - | | 0.050 | 0 | 0.110 | 0 |
| SADE | Various | Various : Various | 0.000 | - | | - | | 0.050 | Sep 2017 | - | | 0.050 | 0 | 0.050 | 0 |
| | | **Subtotal** | 0.060 | - | | - | | 0.100 | | - | | 0.100 | 0.000 | 0.160 | 0.000 |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>K39 / *Field Sustainment Support Ad* | |

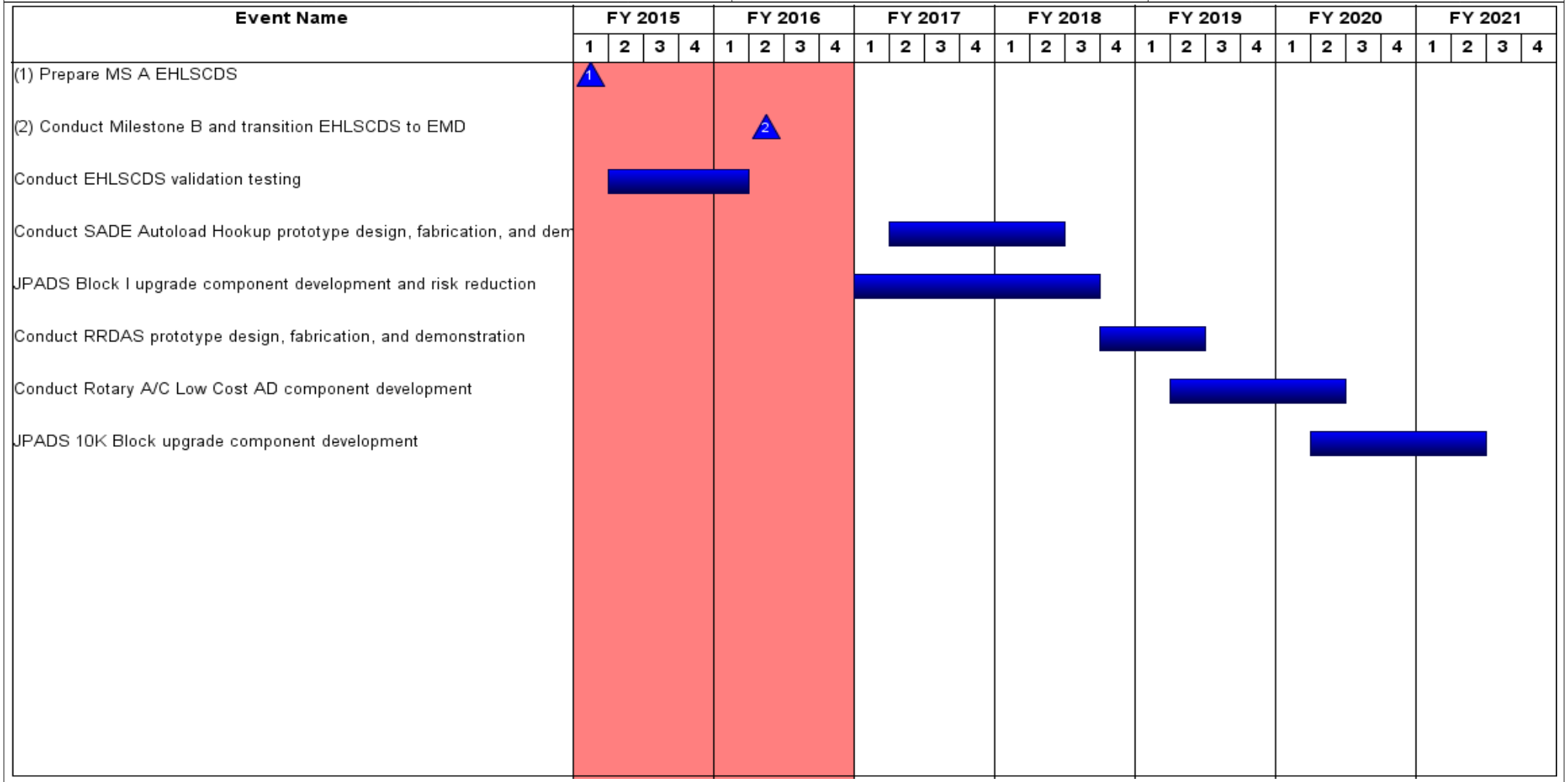
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SADE | Various | YPG, AZ : YPG, AZ | 0.000 | - | | - | | 0.500 | Mar 2017 | - | | 0.500 | Continuing | Continuing | Continuing |
| Extracted High and Low Speed Container Delivery System (EHLSCDS) | Various | YPG, AZ : Arizona | 0.000 | 0.200 | Feb 2015 | 0.800 | Oct 2016 | - | | - | | - | 0 | 1.000 | 0 |
| JPADS Block 1 upgrade | Various | YPG, AZ : YPG, AZ | 0.000 | - | | - | | 0.600 | Jun 2017 | - | | 0.600 | Continuing | Continuing | Continuing |
| | | **Subtotal** | 0.000 | 0.200 | | 0.800 | | 1.100 | | - | | 1.100 | - | - | - |

| | Prior Years | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 24.213 | 0.514 | | 1.875 | | 2.629 | | - | | 2.629 | - | - | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K39 / *Field Sustainment Support Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K39 / *Field Sustainment Support Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| Prepare MS A EHLSCDS | 1 | 2015 | 1 | 2015 |
| Conduct Milestone B and transition EHLSCDS to EMD | 2 | 2016 | 2 | 2016 |
| Conduct EHLSCDS validation testing | 2 | 2015 | 1 | 2016 |
| Conduct SADE Autoload Hookup prototype design, fabrication, and demonstration | 2 | 2017 | 2 | 2018 |
| JPADS Block I upgrade component development and risk reduction | 1 | 2017 | 3 | 2018 |
| Conduct RRDAS prototype design, fabrication, and demonstration | 4 | 2018 | 2 | 2019 |
| Conduct Rotary A/C Low Cost AD component development | 2 | 2019 | 2 | 2020 |
| JPADS 10K Block upgrade component development | 2 | 2020 | 2 | 2021 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>K41 / *Water And Petroleum Distribution - Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K41: *Water And Petroleum Distribution - Ad* | - | 3.409 | 3.764 | 3.662 | - | 3.662 | 4.773 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project develops and demonstrates the potential of prototype equipment and technologies to satisfy petroleum storage, distribution, and quality surveillance system requirements. The Technology Development programs support the development and enhancement of rapidly deployable Petroleum and Water equipment. The mission includes developing fuel quality analysis systems; achieving greater capabilities in the removal of Nuclear, Biological, Chemical (NBC) and other contaminants from water sources; reducing the logistics footprint; developing water reutilization systems to reduce the requirement for transport of water into the theater; and material systems to decrease the logistics footprint and employment time for the transfer of liquid logistics in joint operations area. This vital equipment enables the Army to achieve its mission by providing the Army with the means to be highly mobile and self-sustaining in very hostile joint operations areas. Future Force operations demand that combat systems be rapidly deployable to the theater, rapidly emplaced upon arrival, and rapidly relocated to support a fast moving non-linear battlefield.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** 3K Tactical Water Purification System (3K TWPS)<br>***Description:*** Funding is provided for the following effort<br>***FY 2016 Plans:***<br>Complete detailed system design and prepare Milestone B program documentation and analysis. Initiate Preliminary Design Review (PDR) to support MS B in 3QFY16.<br>***FY 2017 Base Plans:***<br>Complete system design and development leading to Critical Design Review (CDR) in 2QFY18. | - | 0.565 | 0.635 | - | 0.635 |
| ***Title:*** Early Entry Fluid Distribution System (E2FDS)<br>***Description:*** Funding is provided for the following effort<br>***FY 2015 Accomplishments:***<br>Achieve Milestone B approval. Release Request for Proposal (RFP) for (EMD) contract. Source Selection Evaluation Board (SSEB) for EMD contract. EMD Contract award.<br>***FY 2016 Plans:*** | 2.659 | 3.199 | 3.027 | - | 3.027 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Award prototype development contract. Complete initial design of E2FDS. Initiate Preliminary Design Review of E2FDS prototype. Initiate fabrication of prototypes of E2FDS for testing.<br>***FY 2017 Base Plans:***<br>Take delivery of two systems from different contractors, and start Product Verification Testing for both systems. | | | | | |
| ***Title:*** Modular Fuel System (MFS)<br>***Description:*** Funding is provided for the following effort<br>***FY 2015 Accomplishments:***<br>Conduct Operational Testing on the MFS. Test will include the MFS Pump Rack Module (PRM) and the MFS Tank Rack Module (TRM). Funding provides support for Soldiers to conduct Operational Tests of the MFS system. | 0.750 | - | - | - | - |
| **Accomplishments/Planned Programs Subtotals** | 3.409 | 3.764 | 3.662 | - | 3.662 |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • PM PAWS Project L41 654804: *Logistics and Engineer Equipment - Engineering Development L41* | 3.071 | 3.361 | 8.363 | - | 8.363 | 5.065 | 9.336 | 9.436 | 9.507 | Continuing | Continuing |
| • Distribution Sys Petroleum & Water: *Distribution Systems Petroleum & Water MA6000* | 40.692 | 35.381 | 42.656 | 78.240 | 120.896 | 48.687 | 52.915 | 46.589 | 46.057 | Continuing | Continuing |
| • Quality Surveillance Equipment: *Petroleum Quality Analysis System* | 1.435 | 5.368 | 9.287 | - | 9.287 | 6.903 | 6.670 | - | - | 0 | 29.663 |

**Remarks**

**D. Acquisition Strategy**

Develop engineering prototypes for the 3K Tactical Water Purification System (3K TWPS), Early Entry Fluid Distribution System (E2FDS), and select Non-Development Item (NDI) based on market surveys and proposals from industry. Based on market research, will award either competitive or sole source contracts. E2FDS will conduct Product Verification Testing with two different contractor systems, and will use test data to inform a fair opportunity decision for production.

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>K41 / *Water And Petroleum Distribution - Ad* | |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3K Tactical Water Purification System (3K TWPS) | Various | TARDEC : Warren, MI | 0.880 | - | | 0.150 | Mar 2016 | 0.635 | Jan 2017 | - | | 0.635 | 0 | 1.665 | Continuing |
| Early Entry Fluid Distribution System (E2FDS) | C/FFP | TBD : Warren, MI | 0.972 | 1.866 | | 3.199 | Jul 2016 | - | | - | | - | Continuing | Continuing | Continuing |
| 3K Tactical Water Purification System (3K TWPS) | MIPR | NFESC : Port Hueneme, CA | 0.989 | - | | 0.050 | Feb 2016 | - | | - | | - | Continuing | Continuing | Continuing |
| | | **Subtotal** | 2.841 | 1.866 | | 3.399 | | 0.635 | | - | | 0.635 | - | - | - |

**Support ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Early Entry Fluid Distribution System (E2FDS) | Various | TARDEC & PM, PAWS : Warren, MI | 0.390 | 0.793 | Mar 2015 | - | | - | | - | | - | 0 | 1.183 | Continuing |
| | | **Subtotal** | 0.390 | 0.793 | | - | | - | | - | | - | 0.000 | 1.183 | - |

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

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Modular Fuel System (MFS) | MIPR | Yuma Proving Ground : Yuma, AZ | 0.000 | 0.750 | | - | | - | | - | | - | 0 | 0.750 | Continuing |
| 3K Tactical Water Purification System (3K TWPS) | MIPR | TARDEC : Warren, MI | 0.947 | - | | 0.365 | Mar 2016 | - | | - | | - | 0 | 1.312 | Continuing |
| Early Entry Fluid Distribution System (E2FDS) | MIPR | Aberdeen Proving Groung : APG, MD | 0.000 | - | | - | | 3.027 | Jan 2017 | - | | 3.027 | 0 | 3.027 | 0 |

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |

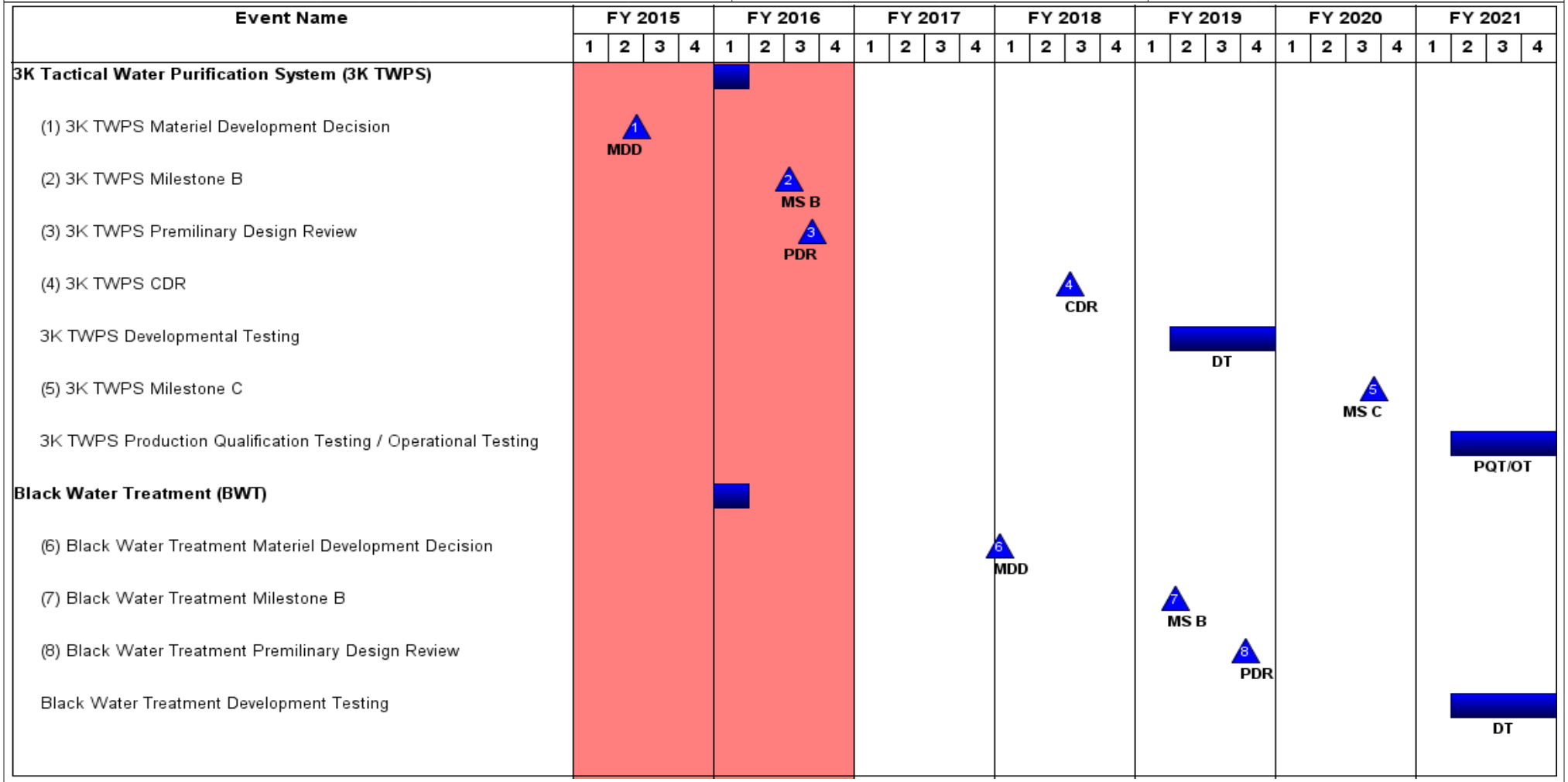
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Subtotal** | 0.947 | 0.750 | | 0.365 | | 3.027 | | - | | 3.027 | 0.000 | 5.089 | - |

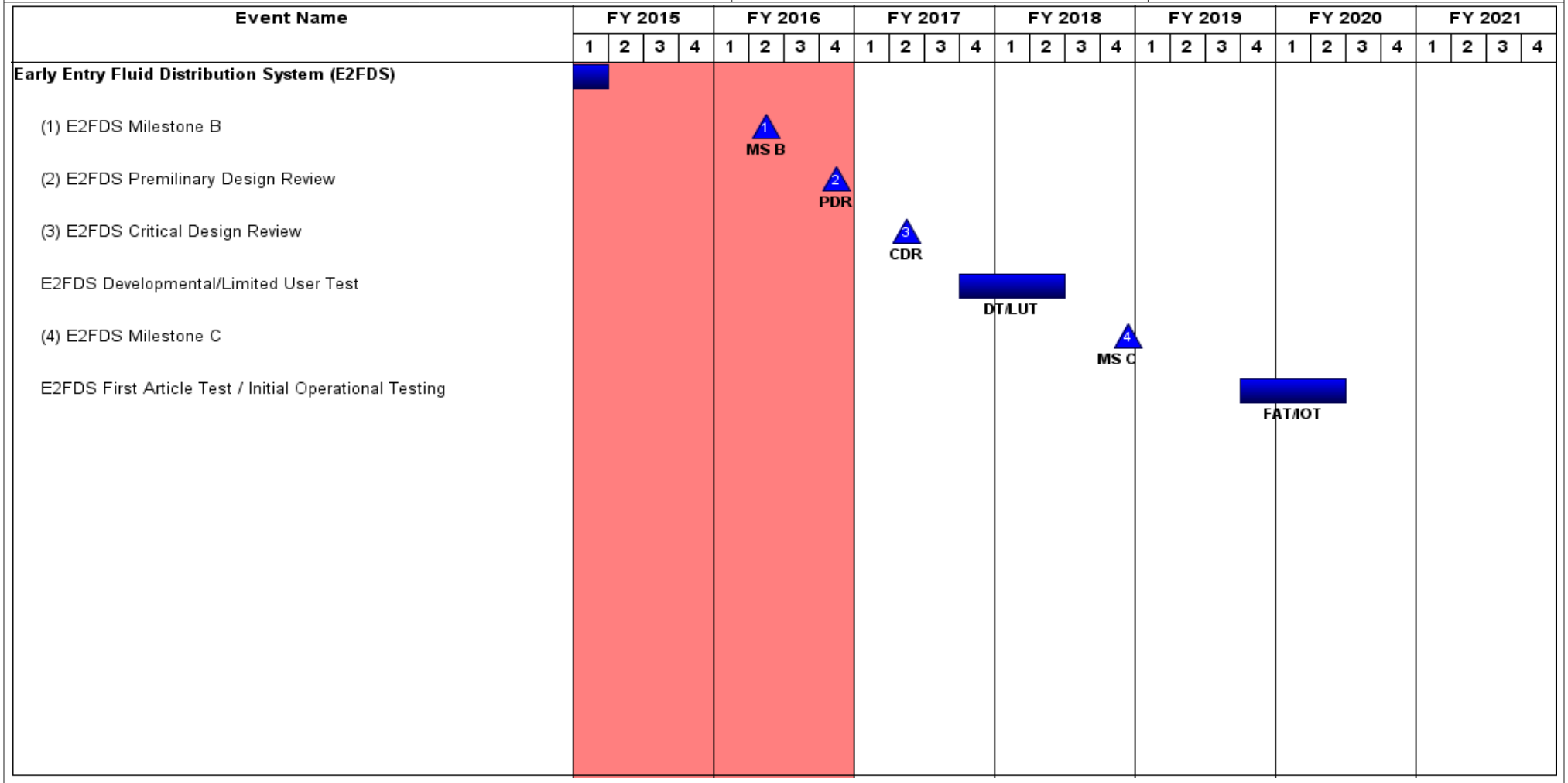
| | Prior Years | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 4.178 | 3.409 | | 3.764 | | 3.662 | | - | | 3.662 | - | - | - |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |



| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>K41 / *Water And Petroleum Distribution - Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| 3K Tactical Water Purification System (3K TWPS) | 1 | 2016 | 1 | 2016 |
| 3K TWPS Materiel Development Decision | 2 | 2015 | 2 | 2015 |
| 3K TWPS Milestone B | 3 | 2016 | 3 | 2016 |
| 3K TWPS Premilinary Design Review | 3 | 2016 | 3 | 2016 |
| 3K TWPS CDR | 3 | 2018 | 3 | 2018 |
| 3K TWPS Developmental Testing | 2 | 2019 | 4 | 2019 |
| 3K TWPS Milestone C | 3 | 2020 | 3 | 2020 |
| 3K TWPS Production Qualification Testing / Operational Testing | 2 | 2021 | 2 | 2022 |
| Black Water Treatment (BWT) | 1 | 2016 | 1 | 2016 |
| Black Water Treatment Materiel Development Decision | 1 | 2018 | 1 | 2018 |
| Black Water Treatment Milestone B | 2 | 2019 | 2 | 2019 |
| Black Water Treatment Premilinary Design Review | 4 | 2019 | 4 | 2019 |
| Black Water Treatment Development Testing | 2 | 2021 | 4 | 2021 |
| Early Entry Fluid Distribution System (E2FDS) | 1 | 2015 | 1 | 2015 |
| E2FDS Milestone B | 2 | 2016 | 2 | 2016 |
| E2FDS Premilinary Design Review | 4 | 2016 | 4 | 2016 |
| E2FDS Critical Design Review | 2 | 2017 | 2 | 2017 |
| E2FDS Developmental/Limited User Test | 4 | 2017 | 2 | 2018 |
| E2FDS Milestone C | 4 | 2018 | 4 | 2018 |
| E2FDS First Article Test / Initial Operational Testing | 4 | 2019 | 2 | 2020 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>VR8 / *Combat Service Support Systems - Ad* | |

| COST ($ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VR8: *Combat Service Support Systems - Ad* | - | 2.588 | 4.048 | 4.401 | - | 4.401 | 4.366 | 2.386 | 2.848 | 2.925 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

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

This project supports development of critical soldier support and sustainment systems including shelter systems (rigid and soft wall), base camp subsystems, field service systems, mortuary affairs equipment, heaters, camouflage systems to counter emerging enemy threat technologies, and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, improve resource and energy efficiency and increase combat effectiveness. This project supports Advanced Component Development and Prototyping of critical tactical support systems that support mobile Joint Service command and control, medical, and maintenance platforms. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| ***Title:*** Energy Efficiency Solutions and Zero-Footprint Base Camp | 1.563 | 2.041 | 2.497 | - | 2.497 |
| ***Description:*** Zero-Footprint Base Camp reduces the operational energy and logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, and power requirements to sustain operations in the field in addition to reducing site preparation, maintenance, and spare parts requirements. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability. | | | | | |
| ***FY 2015 Accomplishments:***<br>Conducted evaluation of integrated technologies that transitioned from the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Integration Laboratory (BCIL). Efforts were focused on proving out subsystem maturity and the potential of these technologies before transitioning into Engineering and Manufacturing Development (EMD) and putting them into operational use within the Army Force Provider base camps as Pre-Planned Product Improvements (P3I). Focus was on evaluating technologies that will improve upon the environmental and energy efficiency performance of the base camp. Specifically the integration and evaluation of energy efficient Expeditionary Rigid Wall Shelters with integrated Environmental Control Units / | | | | | |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Heaters and energy saving appliances that will compliment improved shelter efficiencies and significantly reduce the fuel and resource demand on base camp operations.<br><br>***FY 2016 Plans:***<br>Conduct evaluation and demonstration of novel resource and operational energy saving technologies with continued focus on producing suitable technology demonstration prototypes and reducing technical risk. Identify promising technologies transitioning from the Sustainability, Logistics Basing Science and Technology Objective Demonstration (SLB-STO-D) for integration and evaluation at the FT Devens BCIL. Prepare promising Zero-Footprint Base Camp technologies for transition into Engineering and Manufacturing Development (EMD) supporting Force Provider requirements and Office of the Secretary of Defense (OSD) Joint Expeditionary Basing Work Group initiatives. Specific areas of focus include the integration and evaluation of renewable energy supplementing systems such as solar water heating, low energy demand Environmental Control Units (ECU)/heaters and energy saving appliances that will compliment improved shelter and subsystem efficiencies significantly reducing the fuel and resource demand on base camp operations.<br><br>***FY 2017 Base Plans:***<br>Conduct evaluation of integrated technologies that are transitioning from the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Integration Laboratory (BCIL). Efforts are focused on proving out subsystem maturity and the potential of these technologies before transitioning into Engineering and Manufacturing Development (EMD) and putting them into operational use within the Army Force Provider base camps as Pre-Planned Product Improvements (P3I). Focus will be on evaluating technologies that will improve upon the environmental, resource, and energy efficiency performance of the base camp. Specifically, evaluate technologies transitioning from the Sustainability, Logistics Basing Science and Technology Objective Demonstration (SLB-STO-D). Prepare promising Zero-Footprint Base Camp technologies for transition into Engineering and Manufacturing Development (EMD) supporting Force Provider requirements and OSD Joint Expeditionary Basing Work Group initiatives. | | | | | |
| ***Title:*** Expeditionary Shelter Protection System (ESPS)<br><br>***Description:*** ESPS is a lightweight, rapidly deployable and reusable ballistic protection system that can be installed in commonly used military shelters in expeditionary and remote base camps and outposts where more robust forms of ballistic protection (i.e. sandbags, concrete barriers) are not readily available or logistically feasible.<br><br>***FY 2015 Accomplishments:*** | 0.200 | - | - | - | - |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Completed transition from Science and Technology (S&T) effort and conducted planning to support new development contract for ESPS. | | | | | |
| ***Title:*** Black Waste Elimination for Small Base Camps (150 personnel)<br>***Description:*** Provides the capability to reduce/eliminate the black water generated by small base camps. The objective capability will reduce our sustainment requirements for backhauling black waste water as well as our risk of contaminating the environment with biological contaminants. This capability will significantly reduce reliance on external support and is a key capability required to move toward zero footprint base camps.<br>***FY 2015 Accomplishments:***<br>Transitioned black waste water elimination technologies from RDECOM 6.3 program and developed a demonstration prototype for contingency base applications to prove out component and subsystem maturity.<br>***FY 2016 Plans:***<br>Complete demonstration prototype fabrication and conduct evaluation of component performance for the Black Waste Elimination System and transition into Engineering and Manufacturing Development (EMD). | 0.250 | 0.500 | - | - | - |
| ***Title:*** Solid Waste Disposal for Small Base Camps<br>***Description:*** Provides an integrated waste management (reduction, treatment or disposal process) add-on capability that can safely process 1,000 lbs or more of mixed solid waste in a single day on site. Mixed solid waste produced on a single 150 person site must be properly managed through reduction, reuse, recycling, treatment, or disposal. Most of the waste is nonhazardous solid waste. Provides a substantial improvement over the current practice of burn pits that poses a health risk to Soldiers and/or the backhaul logistics burden.<br>***FY 2015 Accomplishments:***<br>Completed the evaluation of integrated waste management technologies. Prepared specification and contract solicitation for development of the Expeditionary Solid waste Disposal System demonstration prototype.<br>***FY 2016 Plans:***<br>Complete prototype design, fabrication subsystems conduct initial performance evaluation and transition into Engineering and Manufacturing Development (EMD). | 0.575 | 0.360 | - | - | - |
| ***Title:*** Ultralightweight Camouflage Net System (ULCANS)<br>***Description:*** ULCANS is durable, robust, snag resistant state of the art camouflage system that provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression | - | 0.250 | 0.250 | - | 0.250 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| and significant thermal/solar reduction capability. ULCANS utilizes a snag-free design and is capable of use in all types of weather and climatic conditions except in heavy snow and winds. ULCANS variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities. RDT&E funding supports formal development of new ULCANS variants (snow, urban, aviation, 2 sided system) and necessary technology/signature enhancements for current ULCANS variants.<br><br>***FY 2016 Plans:***<br>Complete evaluation/demonstration of ULCANS technology enhancements in a realistic environment. Obtain HQDA approval for CDD to support ULCANS development of new variants and upgrades to existing Woodland/ Desert variants. Initiate planning to support new development contract for ULCANS Arctic/Snow variant and technology enhancements to ULCANS Woodland/Desert variants.<br><br>***FY 2017 Base Plans:***<br>Initiate Milestone B documentation and prepare solicitation to support ULCANS development contract for Arctic/ Snow variant and technology enhancements to ULCANS Woodland/Desert variants. | | | | | |
| ***Title:*** Expeditionary Waste to Energy System<br><br>***Description:*** The Expeditionary Waste to Energy System reduces the operational energy and logistics footprint of the expeditionary base camp system, with the goal of providing an integrated waste management and disposal process add-on capability that can safely process up to two tons of mixed solid organic waste in a single day on site with the energy associated with the management process being converted to usable energy in the form of fuel, heat and/or electric power. This capability will provide a safe and suitable means to dispose of waste in remote expeditionary base camps while reducing the fuel and power requirements to sustain operations in the field. This capability provides a substantial improvement over the current practice of burn pits and backhaul with associated vulnerabilities.<br><br>***FY 2016 Plans:***<br>Conduct evaluation of integrated waste to energy technologies that are transitioning from the RDECOM 6.3 programs. Efforts are focused on proving out subsystem maturity and the potential of these technologies before transitioning into Engineering and Manufacturing Development (EMD).<br><br>***FY 2017 Base Plans:*** | - | 0.897 | 1.654 | - | 1.654 |

| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |

| B. Accomplishments/Planned Programs ($ in Millions) | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|---|---|---|---|---|
| Complete evaluation of integrated waste to energy technologies. Prepare solicitation for development of prototypes for testing. Transition program into EMD. | | | | | |
| **Accomplishments/Planned Programs Subtotals** | 2.588 | 4.048 | 4.401 | - | 4.401 |

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

| Line Item | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| • RDT&E 654804.VR7: *Combat Service Support Systems - RDTE 654804 VR7* | 2.692 | 5.463 | 4.325 | - | 4.325 | 4.162 | 2.418 | 2.905 | 2.984 | Continuing | Continuing |

**Remarks**

**D. Acquisition Strategy**

Evaluate Integrated Technologies in a realistic operational environment and transition promising efforts into EMD. Accelerate Base Camp efficiency and safety initiatives to incorporate in deployed camps and/or incorporate during reset of equipment.

**E. Performance Metrics**

N/A

| Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army | | | Date: February 2016 |
|---|---|---|---|
| Appropriation/Budget Activity<br>2040 / 4 | R-1 Program Element (Number/Name)<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | Project (Number/Name)<br>VR8 / *Combat Service Support Systems - Ad* | |

**Management Services ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Management Support | Various | PM Force Sustainment Systems : Natick, MA | 0.587 | 0.314 | Oct 2014 | 0.334 | Oct 2015 | 0.414 | Oct 2016 | - | | 0.414 | Continuing | Continuing | 0 |
| SBIR+STTR | TBD | various : Various | 0.062 | - | | - | | - | | - | | - | 0 | 0.062 | 0 |
| | | **Subtotal** | 0.649 | 0.314 | | 0.334 | | 0.414 | | - | | 0.414 | - | - | 0.000 |

**Product Development ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soldier Support Equipment | Various | Various : Various | 2.278 | 1.179 | Feb 2015 | 2.114 | Jan 2016 | 2.147 | Jan 2017 | - | | 2.147 | Continuing | Continuing | 0 |
| | | **Subtotal** | 2.278 | 1.179 | | 2.114 | | 2.147 | | - | | 2.147 | - | - | 0.000 |

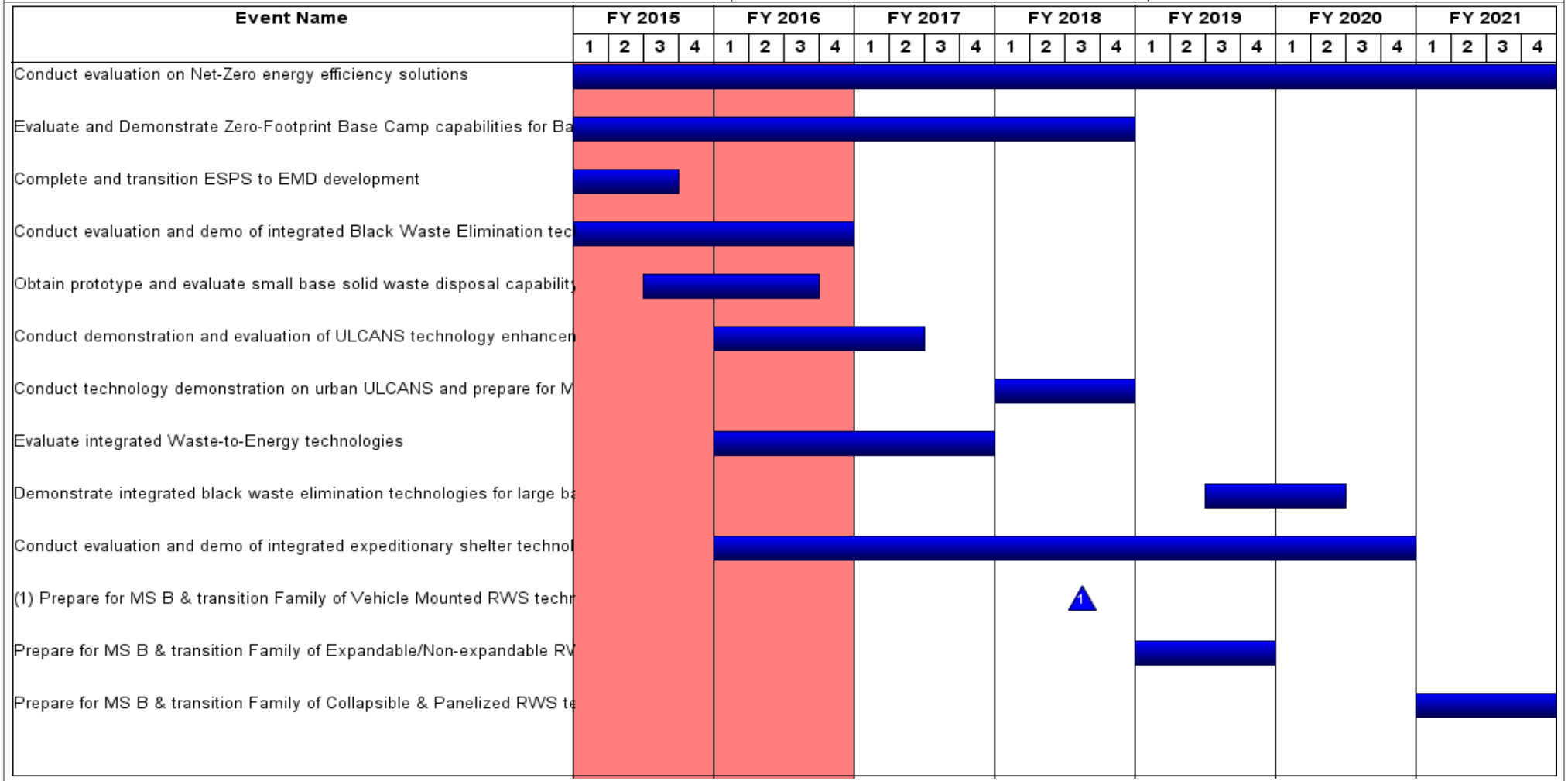
**Test and Evaluation ($ in Millions)**

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | FY 2015 Cost | FY 2015 Award Date | FY 2016 Cost | FY 2016 Award Date | FY 2017 Base Cost | FY 2017 Base Award Date | FY 2017 OCO Cost | FY 2017 OCO Award Date | FY 2017 Total Cost | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soldier Support Equipment | Various | Various : Various | 2.399 | 1.095 | Feb 2015 | 1.600 | Jan 2016 | 1.840 | Jan 2017 | - | | 1.840 | Continuing | Continuing | 0 |
| | | **Subtotal** | 2.399 | 1.095 | | 1.600 | | 1.840 | | - | | 1.840 | - | - | 0.000 |

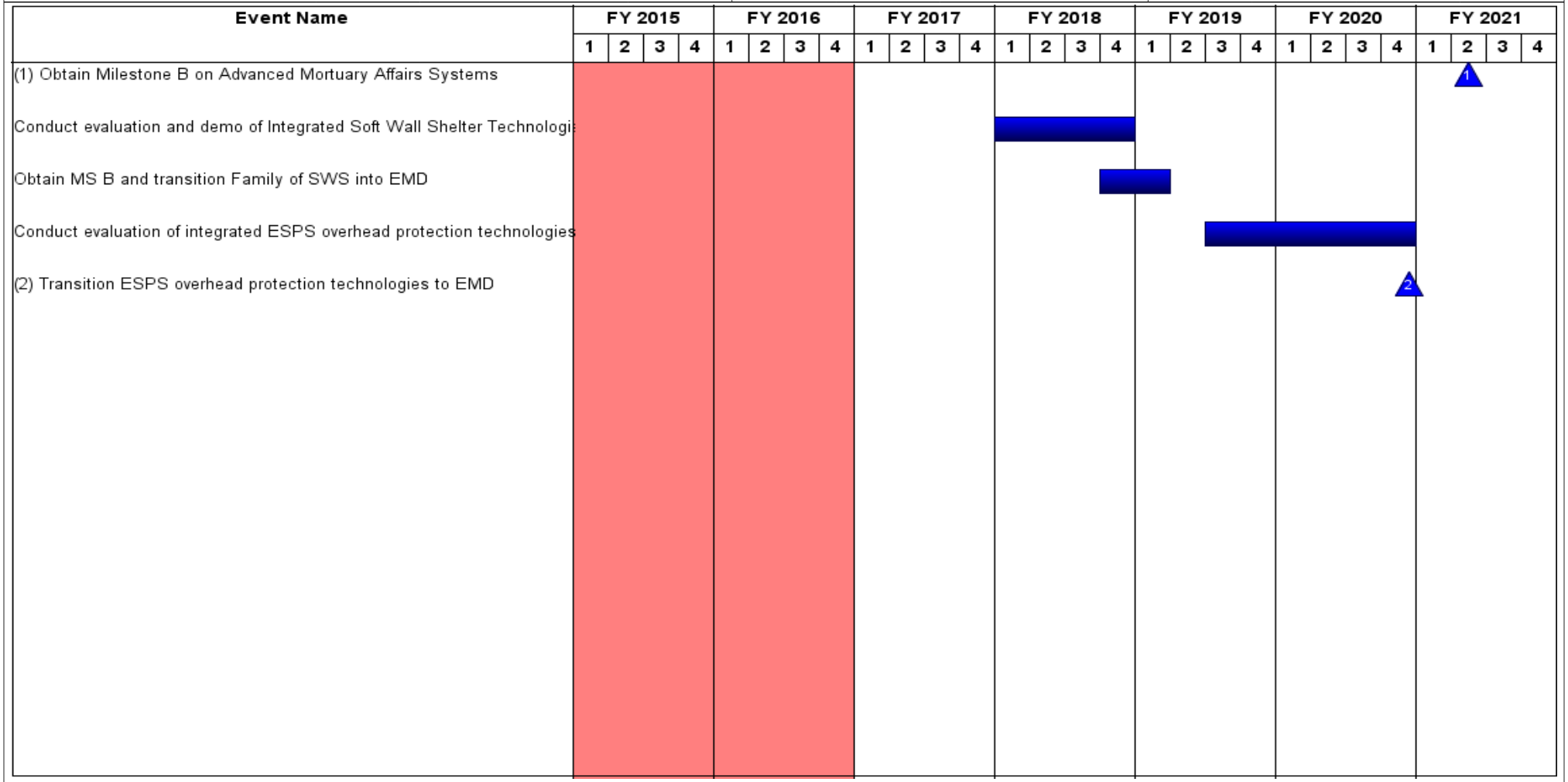
| | Prior Years | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Cost Totals** | 5.326 | 2.588 | | 4.048 | | 4.401 | | - | | 4.401 | - | - | 0.000 |

**Remarks**

| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |



| Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |



| Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army | | Date: February 2016 |
|---|---|---|
| **Appropriation/Budget Activity**<br>2040 / 4 | **R-1 Program Element (Number/Name)**<br>PE 0603804A / *Logistics and Engineer Equipment - Adv Dev* | **Project (Number/Name)**<br>VR8 / *Combat Service Support Systems - Ad* |

## Schedule Details

| | Start | | End | |
|---|---|---|---|---|
| **Events** | **Quarter** | **Year** | **Quarter** | **Year** |
| Conduct evaluation on Net-Zero energy efficiency solutions | 1 | 2012 | 4 | 2022 |
| Evaluate and Demonstrate Zero-Footprint Base Camp capabilities for Base Camp Sys | 1 | 2014 | 4 | 2018 |
| Complete and transition ESPS to EMD development | 1 | 2015 | 3 | 2015 |
| Conduct evaluation and demo of integrated Black Waste Elimination technologies. | 4 | 2014 | 4 | 2016 |
| Obtain prototype and evaluate small base solid waste disposal capability | 3 | 2015 | 3 | 2016 |
| Conduct demonstration and evaluation of ULCANS technology enhancement | 1 | 2016 | 2 | 2017 |
| Conduct technology demonstration on urban ULCANS and prepare for MS B | 1 | 2018 | 4 | 2018 |
| Evaluate integrated Waste-to-Energy technologies | 1 | 2016 | 4 | 2017 |
| Demonstrate integrated black waste elimination technologies for large base camps | 3 | 2019 | 2 | 2020 |
| Conduct evaluation and demo of integrated expeditionary shelter technologies. | 1 | 2016 | 4 | 2020 |
| Prepare for MS B & transition Family of Vehicle Mounted RWS technology to EMD | 3 | 2018 | 3 | 2018 |
| Prepare for MS B & transition Family of Expandable/Non-expandable RWS to EMD | 1 | 2019 | 4 | 2019 |
| Prepare for MS B & transition Family of Collapsible & Panelized RWS tech to EMD | 1 | 2021 | 4 | 2021 |
| Obtain Milestone B on Advanced Mortuary Affairs Systems | 2 | 2021 | 2 | 2021 |
| Conduct evaluation and demo of Integrated Soft Wall Shelter Technologies (SWS) | 1 | 2018 | 4 | 2018 |
| Obtain MS B and transition Family of SWS into EMD | 4 | 2018 | 1 | 2019 |
| Conduct evaluation of integrated ESPS overhead protection technologies. | 3 | 2019 | 4 | 2020 |
| Transition ESPS overhead protection technologies to EMD | 4 | 2020 | 4 | 2020 |