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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army                                                                              |                 |         |                      |              |                                                                                  |               |         |         |         | DATE: April 2013 |                  |            |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|---------|------------------|------------------|------------|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         |         |                  |                  |            |
| COST (\$ in Millions)                                                                                                                   | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017 | FY 2018          | Cost To Complete | Total Cost |
| Total Program Element                                                                                                                   | -               | 173.902 | 43.706               | 41.703       | -                                                                                | 41.703        | 49.811  | 34.604  | 20.258  | 18.485           | Continuing       | Continuing |
| 194: Engine Driven Gen Ed                                                                                                               | -               | 10.854  | 9.692                | 5.027        | -                                                                                | 5.027         | 11.503  | 9.332   | 4.596   | 1.244            | Continuing       | Continuing |
| H01: Combat Engineer Eq Ed                                                                                                              | -               | 3.836   | 6.351                | 2.172        | -                                                                                | 2.172         | 3.388   | 2.272   | 2.010   | 3.600            | Continuing       | Continuing |
| H02: Tactical Bridging - Engineering Development                                                                                        | -               | 60.403  | 9.525                | 24.374       | -                                                                                | 24.374        | 23.395  | 11.290  | 2.886   | 2.935            | Continuing       | Continuing |
| H14: Materials Handling Equipment - Ed                                                                                                  | -               | 1.613   | 1.415                | 0.298        | -                                                                                | 0.298         | 0.576   | 0.986   | 0.964   | 0.615            | Continuing       | Continuing |
| L39: Field Sustainment Support Ed                                                                                                       | -               | 4.094   | 2.550                | 1.789        | -                                                                                | 1.789         | 2.753   | 2.588   | 2.269   | 2.456            | Continuing       | Continuing |
| L41: Water And Petroleum Distribution - Ed                                                                                              | -               | 2.012   | 3.839                | 2.650        | -                                                                                | 2.650         | 4.186   | 4.106   | 3.789   | 3.817            | Continuing       | Continuing |
| L43: ENGINEER SUPPORT EQUIPMENT - ED                                                                                                    | -               | 1.061   | 1.916                | 0.000        | -                                                                                | 0.000         | 0.000   | 0.000   | 0.000   | 0.000            | Continuing       | Continuing |
| L46: Maintenance Support Equipment                                                                                                      | -               | 3.064   | 3.697                | 1.232        | -                                                                                | 1.232         | 2.045   | 1.976   | 1.829   | 1.903            | Continuing       | Continuing |
| L47: Improved Environmental Control Units Ed                                                                                            | -               | 0.000   | 2.976                | 2.968        | -                                                                                | 2.968         | 0.000   | 0.000   | 0.000   | 0.000            | Continuing       | Continuing |
| L50: JOINT LIGHT TACTICAL VEHICLES (JLTV) - SDD                                                                                         | -               | 84.500  | 0.000                | 0.000        | -                                                                                | 0.000         | 0.000   | 0.000   | 0.000   | 0.000            | Continuing       | Continuing |
| VR7: Combat Service Support Systems                                                                                                     | -               | 2.465   | 1.745                | 1.193        | -                                                                                | 1.193         | 1.965   | 2.054   | 1.915   | 1.915            | Continuing       | Continuing |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                       |                 |         |                      |              |                                                                                  |               |         |         |         |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                            |                 |         |                      |              |                                                                                  |               |         |         |         |                  |                  |            |
| <b>Note</b><br>Change Summary Explanation: Funding - FY 2014: Adjustment for Tactical Bridging DH02.                                    |                 |         |                      |              |                                                                                  |               |         |         |         |                  |                  |            |

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                         |         | DATE: April 2013 |             |               |
| APPROPRIATION/BUDGET ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | R-1 ITEM NOMENCLATURE                                   |         |                  |             |               |
| 2040: Research, Development, Test & Evaluation, Army                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | PE 0604804A: Logistics and Engineer Equipment - Eng Dev |         |                  |             |               |
| BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                         |         |                  |             |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                         |         |                  |             |               |
| This Program Element (PE) provides system development and demonstration for various projects. This PE includes the development of military tactical bridging, material handling equipment, construction equipment, engineer support equipment, soldier support equipment (to include shelter systems, environmental control, field service equipment, camouflage systems and aerial delivery equipment), water purification equipment, petroleum distribution equipment, mobile electric power and water craft. |  |                                                         |         |                  |             |               |
| Increase from FY 2013 to FY 2014 reflects DH02 Tactical Briding - Engineering Development increase in FY14                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                         |         |                  |             |               |
| B. Program Change Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | FY 2012                                                 | FY 2013 | FY 2014 Base     | FY 2014 OCO | FY 2014 Total |
| Previous President's Budget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | 173.146                                                 | 43.706  | 51.442           | -           | 51.442        |
| Current President's Budget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 173.902                                                 | 43.706  | 41.703           | -           | 41.703        |
| Total Adjustments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 0.756                                                   | 0.000   | -9.739           | -           | -9.739        |
| • Congressional General Reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | -                                                       | -       |                  |             |               |
| • Congressional Directed Reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | -                                                       | -       |                  |             |               |
| • Congressional Rescissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | -                                                       | -       |                  |             |               |
| • Congressional Adds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | -                                                       | -       |                  |             |               |
| • Congressional Directed Transfers                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | -                                                       | -       |                  |             |               |
| • Reprogrammings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | -                                                       | -       |                  |             |               |
| • SBIR/STTR Transfer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | -                                                       | -       |                  |             |               |
| • Adjustments to Budget Years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | -                                                       | -       | 4.194            | -           | 4.194         |
| • Other Adjustments 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 0.756                                                   | -       | -13.933          | -           | -13.933       |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |         |                      |                 |                                                                                     |                  |         |         | DATE: April 2013                     |         |                     |               |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |         |                      |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>194: Engine Driven Gen Ed |         |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO <sup>##</sup>                                                        | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                              | FY 2018 | Cost To<br>Complete | Total<br>Cost |
| 194: Engine Driven Gen Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -                  | 10.854  | 9.692                | 5.027           | -                                                                                   | 5.027            | 11.503  | 9.332   | 4.596                                | 1.244   | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| Not applicable for this item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| This project supports the Tactical Electric Power (TEP) program which is established to develop a Modernized, Standard Family of Mobile Electric Power Sources for all Services throughout the Department of Defense. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power sources that are essential to the development and eventual fielding of modernized mobile electric power sources from 0.5 kilowatt (kW) to 840kW. These sources will ensure compliance with federally mandated environmental statutes and significantly lower noise and thermal signatures (thereby improving battlefield survivability), improve fuel and electrical efficiency, reduce weight, enhance portability, improve reliability and maintainability, and reduce operational and support costs. FY13-14 funds continue the Engineering and Manufacturing Development (EMD) Phase for Large Advanced Mobile Power Sources (LAMPS). Funding in FY14 will also prepare the Improved Power Distribution Illumination Systems Electrical (IPDISE)/Microgrids performance specification and initiate the EMD phase. |                    |         |                      |                 |                                                                                     |                  |         |         |                                      |         |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |         |                      |                 |                                                                                     |                  |         |         | FY 2012                              | FY 2013 | FY 2014             |               |
| Title: LAMPS Engineering & Manufacturing Development (EMD) Phase<br><br>Articles:<br><br>Description: Prepare LAMPS performance specification and begin EMD Phase<br><br>FY 2012 Accomplishments:<br>Continue preparing LAMPS performance specification and continue EMD Phase<br><br>FY 2013 Plans:<br>Continue EMD Phase of LAMPS<br><br>FY 2014 Plans:<br>Continue EMD Phase of LAMPS. Prepare the IPDISE/Microgrids performance specification and initiate EMD phase.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |         |                      |                 |                                                                                     |                  |         |         | 10.854                               | 9.692   | 5.027               |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |         |                      |                 |                                                                                     |                  |         |         | 0                                    | 0       |                     |               |
| Accomplishments/Planned Programs Subtotals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |         |                      |                 |                                                                                     |                  |         |         | 10.854                               | 9.692   | 5.027               |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                     |                  |         |         |                                      | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>194: Engine Driven Gen Ed |                  |                     |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                              | FY 2018          | Cost To<br>Complete | Total Cost |
| • 643804.G11: Logistics and<br>Engineer Equipment - Adv Dev<br>G11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.669   | 3.921   | 2.501           |                                                                                     | 2.501            | 0.788   | 7.401   | 4.192                                | 0.823            | Continuing          | Continuing |
| • MA9800: Generators and<br>Associated Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 67.897  | 60.302  | 129.437         |                                                                                     | 129.437          | 176.107 | 254.448 | 273.954                              | 45.435           | Continuing          | Continuing |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |
| D. Acquisition Strategy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |
| LAMPS (Large Advanced Mobile Power Sources) Engineering & Manufacturing Development (EMD) Phase: A single competitive contract was awarded for the LAMPS EMD Phase. The EMD phase will be a Fixed Price Incentive Firm (FPIF) contract. The EMD contract will require the vendor to integrate components and fabricate prototypes, verify prototype performance through contractor testing, deliver production representative generator sets and conduct instructor and key personnel training (I&KPT) for Government testing. Major data deliverables will include the technical data package (TDP), provisioning data, logistics management information, technical manuals, test reports and cost data reporting. The Government will purchase the TDP from the vendor with the intent of using it in future competitive re-procurements for LAMPS. A Failure Mode, Effects and Criticality Analysis (FMECA), Level of Repair Analysis (LORA), Functional Configuration Audit (FCA) and a Physical Configuration Audit (PCA) will be completed to verify that the TDP accurately describes the qualified production sets. In addition, Improved Power Distribution Illumination Systems Electrical (IPDISE)/Microgrids will prepare the program's performance specification and initiate the EMD phase. |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |
| E. Performance Metrics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                     |                  |         |         |                                      |                  |                     |            |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                             |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                            |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                             |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>194: <i>Engine Driven Gen Ed</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                                             |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                   | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| LAMPS (100-200kW)                                                                                                                                                    | C/FPIF                            | L-3 Communications, Westwood Corporation, Tulsa, OK:Various | 6.069                  | 10.854         | Aug 2012          | 9.692                                                                                          |                   | -                   |                   | -                  |                   | -                                                  | Continuing              | Continuing        | Continuing                      |
| IPDISE/Microgrids                                                                                                                                                    | C/FFP                             | TBD:TBD                                                     | 0.000                  | -              |                   | -                                                                                              |                   | 3.000               | Sep 2014          | -                  |                   | 3.000                                              | 0.000                   | 3.000             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                             | 6.069                  | 10.854         |                   | 9.692                                                                                          |                   | 3.000               |                   | 0.000              |                   | 3.000                                              |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                                             |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                   | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| LAMPS (100-200kW)                                                                                                                                                    | Various                           | CECOM LCMC:Aberdeen Proving Ground (APG), MD                | 3.485                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                  | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                             | 3.485                  | 0.000          |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                              |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                                             |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                   | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| LAMPS (100-200kW)                                                                                                                                                    | MIPR                              | Army Testing & Evaluation Ctr (ATEC):APG, MD                | 0.000                  | -              |                   | -                                                                                              |                   | 2.027               | Jan 2014          | -                  |                   | 2.027                                              | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                             | 0.000                  | 0.000          |                   | 0.000                                                                                          |                   | 2.027               |                   | 0.000              |                   | 2.027                                              |                         |                   |                                 |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                                             | 9.554                  | 10.854         |                   | 9.692                                                                                          |                   | 5.027               |                   | 0.000              |                   | 5.027                                              |                         |                   |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                                             |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                    |                         |                   |                                 |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army                                                                                                         |  |  | <b>DATE:</b> April 2013                                                                        |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |
|                                                                                                                                                                      |  |  | <b>PROJECT</b><br>194: <i>Engine Driven Gen Ed</i>                                             |  |  |

|                                              | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|----------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                              | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Prepare Procurement Package and Solicitation |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Award Phase 1 Contract                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| EMD Phase 1                                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| DT/Log Demo/OT                               |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| MS C-LAMPS                                   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| IPDISE/Microgrids                            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Pre-EMD Review - IPDISE/Microgrids           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| RFP & Solicitation - IPDISE/Microgrids       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Milestone B - IPDISE/Microgrids              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| EMD Award - IPDISE/Microgrids                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Phase 1 EMD - IPDISE/Microgrids              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Small Tactical Electric Power (STEP)         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Pre-EMD Review - STEP                        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| RFP & Solicitation - STEP                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Milestone B - STEP                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| EMD Award - STEP                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Phase 1 EMD - STEP                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Army

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

2040: *Research, Development, Test & Evaluation, Army*  
BA 5: *System Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**

PE 0604804A: *Logistics and Engineer Equipment - Eng Dev*

**PROJECT**

194: *Engine Driven Gen Ed*

## Schedule Details

| Events                                       | Start   |      | End     |      |
|----------------------------------------------|---------|------|---------|------|
|                                              | Quarter | Year | Quarter | Year |
| Prepare Procurement Package and Solicitation | 2       | 2012 | 2       | 2012 |
| Award Phase 1 Contract                       | 4       | 2012 | 4       | 2012 |
| EMD Phase 1                                  | 1       | 2013 | 4       | 2015 |
| DT/Log Demo/OT                               | 2       | 2014 | 3       | 2015 |
| MS C-LAMPS                                   | 4       | 2015 | 4       | 2015 |
| IPDISE/Microgrids                            | 3       | 2014 | 4       | 2016 |
| Pre-EMD Review - IPDISE/Microgrids           | 1       | 2014 | 1       | 2014 |
| RFP & Solicitation - IPDISE/Microgrids       | 2       | 2014 | 4       | 2014 |
| Milestone B - IPDISE/Microgrids              | 4       | 2014 | 4       | 2014 |
| EMD Award - IPDISE/Microgrids                | 4       | 2014 | 4       | 2014 |
| Phase 1 EMD - IPDISE/Microgrids              | 1       | 2015 | 4       | 2016 |
| Small Tactical Electric Power (STEP)         | 4       | 2015 | 4       | 2018 |
| Pre-EMD Review - STEP                        | 1       | 2015 | 1       | 2015 |
| RFP & Solicitation - STEP                    | 1       | 2015 | 3       | 2015 |
| Milestone B - STEP                           | 3       | 2015 | 3       | 2015 |
| EMD Award - STEP                             | 3       | 2015 | 3       | 2015 |
| Phase 1 EMD - STEP                           | 3       | 2015 | 2       | 2018 |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|---------------------------------------|------------------|------------------|------------|--|--|--|--|--|--|--|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                                  |               |         |         |                                       | DATE: April 2013 |                  |            |  |  |  |  |  |  |  |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>H01: Combat Engineer Eq Ed |                  |                  |            |  |  |  |  |  |  |  |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                               | FY 2018          | Cost To Complete | Total Cost |  |  |  |  |  |  |  |
| H01: Combat Engineer Eq Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -               | 3.836   | 6.351                | 2.172        | -                                                                                | 2.172         | 3.388   | 2.272   | 2.010                                 | 3.600            | Continuing       | Continuing |  |  |  |  |  |  |  |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| This project supports the System Development and Demonstration(SDD) of military Construction Equipment used in support of horizontal and vertical engineer construction tasks and to develop a variety of enabling systems that will support and improve mobility for Engineers in the Brigade Combat Teams (BCT) and Combat Support Brigades (CSB) forces. This project also supports the SDD of enabling systems to meet critical capabilities of joint interdependence through Air and Ground Line of Communication and Rapid Tactical Earthmoving repair and construction which increase the operational reach of modular forces. The BCT and CSB systems include: High Mobility Engineer Excavators, Scrapers, Scoop Loaders, Skid Steer Loaders, Dozers, Cranes and Graders. This project will also support the Research into the Deuce Replacement and the Energy Productivity Study. |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |         |                      |              |                                                                                  |               |         |         |                                       | FY 2012          | FY 2013          | FY 2014    |  |  |  |  |  |  |  |
| Title: Family of All Terrain Cranes<br><br><div>Articles:</div><br><br><div>Description:</div> System Pre-Award requirements, Key Performance Parameters (KPP), selection criteria development. Testing of systems.<br><br><div>FY 2012 Accomplishments:</div> System Pre-Award requirements, KPP, selection criteria development. Testing of systems.<br><br><div>FY 2013 Plans:</div> System Pre-Award requirements, KPP, selection criteria development. Testing of systems.                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       | 1.675<br>0       | 1.306<br>0       | 0.000      |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| Title: CE Armor<br><br><div>Articles:</div><br><br><div>Description:</div> Design armor kits for Combat Engineer Equipment.<br><br><div>FY 2013 Plans:</div> Qualify alternative sources of supply for opaque & Transparent armor on existing CE equipment. Full Vehicle Armor Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                                  |               |         |         |                                       | 0.000            | 1.000<br>0       | 0.000      |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |
| Title: CE Robotics Research<br><br><div>Articles:</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                                  |               |         |         |                                       | 0.100<br>0       | 0.500<br>0       | 0.250      |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                       |                  |                  |            |  |  |  |  |  |  |  |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                 |  |                                                                                     | DATE: April 2013                      |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |  | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>H01: Combat Engineer Eq Ed |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                        |  |                                                                                     | FY 2012                               | FY 2013    | FY 2014 |
| Description: Development of Robotics Research                                                                                           |  |                                                                                     |                                       |            |         |
| FY 2012 Accomplishments:<br>Development of Robotics Research                                                                            |  |                                                                                     |                                       |            |         |
| FY 2013 Plans:<br>Development of Robotics Research                                                                                      |  |                                                                                     |                                       |            |         |
| FY 2014 Plans:<br>Development of Robotics Research                                                                                      |  |                                                                                     |                                       |            |         |
| Title: CE SimulatorsArticles:                                                                                                           |  |                                                                                     | 1.894<br>0                            | 1.245<br>0 | 0.300   |
| Description: Labor, software, and hardware simulator development                                                                        |  |                                                                                     |                                       |            |         |
| FY 2012 Accomplishments:<br>Labor, software, and hardware simulator development                                                         |  |                                                                                     |                                       |            |         |
| FY 2013 Plans:<br>Labor, software, and hardware simulator development                                                                   |  |                                                                                     |                                       |            |         |
| FY 2014 Plans:<br>Labor, software, and hardware simulator development                                                                   |  |                                                                                     |                                       |            |         |
| Title: Hazard ClearanceArticles:                                                                                                        |  |                                                                                     | 0.000                                 | 0.500<br>0 | 0.000   |
| Description: Hazard Clearance at Speed                                                                                                  |  |                                                                                     |                                       |            |         |
| FY 2013 Plans:<br>Adapt existing vehicle to provide area and route clearance to remove explosive and non-expolsive obstacles.           |  |                                                                                     |                                       |            |         |
| Title: Forced Entry (Airborne/Air Assault) HMEE, Grader, ERACC Type 4 and Loader Type 1 Study/DevelopmentArticles:                      |  |                                                                                     | 0.000                                 | 0.500<br>0 | 0.000   |
| Description: Forced Entry (Airborne/Air Assault) HMEE, Grader, ERACC and Loader Type 1 Study/Development                                |  |                                                                                     |                                       |            |         |
| FY 2013 Plans:                                                                                                                          |  |                                                                                     |                                       |            |         |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     | DATE: April 2013                      |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>H01: Combat Engineer Eq Ed |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     | FY 2012                               | FY 2013    | FY 2014 |
| FY13: ERACC Type 4 Study/Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                     |                                       |            |         |
| <b>Title:</b> Market Research<br><br><b>Description:</b> Market Research Survey<br><br><b>FY 2013 Plans:</b><br>Conduct market research and documentation preparation for all types of construction equipment.<br><br><b>FY 2014 Plans:</b><br>Conduct market research and documentation preparation for all types of construction equipment.                                                                                                                                                                                                                                           |                                                                                     | 0.000                                 | 0.100<br>0 | 0.400   |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |                                       |            |         |
| <b>Title:</b> Fuel Efficiency<br><br><b>Description:</b> Improve Fuel Efficiency/Reduce Maintenance Time<br><br><b>FY 2013 Plans:</b><br>Using Government supplied vehicles (GFE), evaluate new technologies be developed by private industry to improve the efficiency or reduce maintenance burden.                                                                                                                                                                                                                                                                                   |                                                                                     | 0.000                                 | 0.250<br>0 | 0.000   |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |                                       |            |         |
| <b>Title:</b> Operational Energy/Duty Cycle<br><br><b>Description:</b> Operational Energy/Duty Cycle Monitoring<br><br><b>FY 2013 Plans:</b><br>Instrumentation of vehicles in select units to monitor the usage and to establish training and operational usage of the machine. This data, once analyzed will be used in requirements development.<br><br><b>FY 2014 Plans:</b><br>Instrumentation of vehicles in select units to monitor the usage and to establish training and operational usage of the machine. This data, once analyzed will be used in requirements development. |                                                                                     | 0.000                                 | 0.250<br>0 | 0.872   |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |                                       |            |         |
| <b>Title:</b> ERACC Type III<br><br><b>Description:</b> ERACC Type III Equipment<br><br><b>FY 2013 Plans:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     | 0.000                                 | 0.200<br>0 | 0.000   |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |                                       |            |         |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                 |         |         |                 |                                                                                     |                  |         |         |                                       | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>H01: Combat Engineer Eq Ed |                  |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                        |         |         |                 |                                                                                     |                  |         |         |                                       | FY 2012          | FY 2013             | FY 2014    |
| Integration of ERACC Type III Equipment                                                                                                 |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Title: System Engineering/Program Management                                                                                            |         |         |                 | Articles:                                                                           |                  |         |         |                                       | 0.000            | 0.500<br>0          | 0.350      |
| Description: Program Management                                                                                                         |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| FY 2013 Plans:<br>Program Management Support of R&D Program for CE                                                                      |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| FY 2014 Plans:<br>Program Management Support of R&D Program for CE                                                                      |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Title: SBIR+STIR                                                                                                                        |         |         |                 | Articles:                                                                           |                  |         |         |                                       | 0.167<br>0       | 0.000               | 0.000      |
| Description: SBIR/STIR                                                                                                                  |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| FY 2012 Accomplishments:<br>SBIR+STIR                                                                                                   |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                              |         |         |                 |                                                                                     |                  |         |         |                                       | 3.836            | 6.351               | 2.172      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                       |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Line Item                                                                                                                               | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                               | FY 2018          | Cost To<br>Complete | Total Cost |
| • High Mobility Engineer Excavator I: High Mobility Engineer Excavator I                                                                | 20.702  | 30.042  | 23.465          |                                                                                     | 23.465           | 22.541  |         |                                       |                  | 0.000               | 96.750     |
| • HMEE III: High Mobility Engineer Excavator III                                                                                        | 2.067   |         |                 |                                                                                     |                  |         |         |                                       |                  | 0.000               | 2.067      |
| • Grader, Mtzd, Hvy: Grader, Mtzd, Hvy                                                                                                  | 2.201   | 2.028   | 2.000           |                                                                                     | 2.000            |         |         |                                       |                  | 0.000               | 6.229      |
| • Hydraulic Excavator: Hydraulic Excavator                                                                                              |         |         | 50.122          |                                                                                     | 50.122           |         |         |                                       |                  | 0.000               | 50.122     |
| • Plant, Asphalt Mixing: Plant, Asphalt Mixing                                                                                          | 0.614   | 3.629   |                 |                                                                                     |                  |         |         |                                       |                  | Continuing          | Continuing |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                      |         |         |                 |                                                                                     |                  |         |         |                                       | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                      |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>H01: Combat Engineer Eq Ed |                  |                     |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                            |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                    | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                               | FY 2018          | Cost To<br>Complete | Total Cost |
| • Tractor Full Tracked, Med T-9:<br><i>Tractor Full Tracked, Med T-9</i>                                                                                                                                                                                                                                                                                                     | 50.434  | 20.867  | 28.828          |                                                                                     | 28.828           | 28.505  | 38.652  | 21.470                                | 22.148           | Continuing          | Continuing |
| • All Terrain Cranes: <i>All Terrain<br/>Cranes</i>                                                                                                                                                                                                                                                                                                                          |         | 4.003   | 19.863          |                                                                                     | 19.863           | 25.452  | 38.800  | 29.947                                | 24.399           | Continuing          | Continuing |
| • Skid Steer Loaders: <i>Skid Steer<br/>Loaders</i>                                                                                                                                                                                                                                                                                                                          | 3.984   |         |                 |                                                                                     |                  |         |         |                                       |                  | 0.000               | 3.984      |
| • Scraper, Earthmoving: <i>Scraper,<br/>Earthmoving</i>                                                                                                                                                                                                                                                                                                                      | 21.031  | 6.146   | 36.078          |                                                                                     | 36.078           | 24.282  | 20.868  | 33.186                                | 12.308           | Continuing          | Continuing |
| • EMMs: <i>EMMs</i>                                                                                                                                                                                                                                                                                                                                                          | 43.432  | 31.200  | 9.721           |                                                                                     | 9.721            | 10.340  | 1.226   |                                       |                  | 0.000               | 95.919     |
| • ERACC 4: <i>ERACC IV</i>                                                                                                                                                                                                                                                                                                                                                   |         | 13.725  | 13.590          |                                                                                     | 13.590           | 13.597  | 13.907  | 14.547                                | 1.990            | Continuing          | Continuing |
| • Const Equip ESP: <i>SLEP</i>                                                                                                                                                                                                                                                                                                                                               | 9.771   | 13.351  | 16.088          |                                                                                     | 16.088           | 14.709  | 14.959  | 13.522                                | 15.000           | 0.000               | 97.400     |
| Remarks                                                                                                                                                                                                                                                                                                                                                                      |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| D. Acquisition Strategy                                                                                                                                                                                                                                                                                                                                                      |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Conduct research, development, and investigations on future Construction Equipment (CE) and identify the path forward for programs to be transitioned for PEO program management. Identify technical advancements that can improve reliability, survivability, transportability, availability, maintainability and reduce the logistical footprints for future CE equipment. |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| E. Performance Metrics                                                                                                                                                                                                                                                                                                                                                       |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                                                                                           |         |         |                 |                                                                                     |                  |         |         |                                       |                  |                     |            |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                              |                                           |                                               |                            |                |                       |                                                                                            |                       |                         |                       |                        |                       | <b>DATE:</b> April 2013                      |                             |                       |                                         |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                                           |                                               |                            |                |                       | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                       |                         |                       |                        |                       | <b>PROJECT</b><br>H01: Combat Engineer Eq Ed |                             |                       |                                         |
| <b>Management Services (\$ in Millions)</b>                                                                                                    |                                           |                                               |                            | <b>FY 2012</b> |                       | <b>FY 2013</b>                                                                             |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b>                     |                             |                       |                                         |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>                                                                                | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>                                  | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| SBIR+STIR                                                                                                                                      | TBD                                       | TACOM:Warren,<br>Michigan                     | 0.000                      | 0.167          |                       | -                                                                                          |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 0.167                 | 0.000                                   |
| <b>Subtotal</b>                                                                                                                                |                                           |                                               | 0.000                      | 0.167          |                       | 0.000                                                                                      |                       | 0.000                   |                       | 0.000                  |                       | 0.000                                        | 0.000                       | 0.167                 | 0.000                                   |
| <b>Product Development (\$ in Millions)</b>                                                                                                    |                                           |                                               |                            | <b>FY 2012</b> |                       | <b>FY 2013</b>                                                                             |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b>                     |                             |                       |                                         |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>                                                                                | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>                                  | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| System Pre-Award requirements, KPP, selection criteria development, Testing of systems                                                         | Various                                   | TACOM & TARDEC:Warren, MI                     | 0.000                      | 1.675          | Dec 2011              | 1.306                                                                                      |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 2.981                 | 0.000                                   |
| Development of Robotic Research for Combat Engineer                                                                                            | Various                                   | TBD:TBD                                       | 1.619                      | 0.100          | Dec 2011              | 0.500                                                                                      |                       | 0.250                   |                       | -                      |                       | 0.250                                        | 0.000                       | 2.469                 | Continuing                              |
| Design armor kits for Combat Engineer                                                                                                          | Various                                   | TARDEC:Warren, MI                             | 5.512                      | -              |                       | 1.000                                                                                      |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 6.512                 | Continuing                              |
| Development of Simulator                                                                                                                       | Various                                   | PEO Stricom:PEO, Stricom, Orlando, FL         | 5.409                      | 1.894          | Dec 2011              | 1.245                                                                                      |                       | 0.300                   |                       | -                      |                       | 0.300                                        | 0.000                       | 8.848                 | Continuing                              |
| Forced Entry: HMEE Type II, Grader, ERACC Type III and Loader Type I Study/ Development                                                        | Various                                   | TARDEC:Warren, MI                             | 8.239                      | -              |                       | 0.500                                                                                      |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 8.739                 | Continuing                              |
| Hazard Clearance at Speed                                                                                                                      | TBD                                       | TARDEC:Warren, Michigan                       | 0.000                      | -              |                       | 0.500                                                                                      |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 0.500                 | 0.000                                   |
| Market Research                                                                                                                                | TBD                                       | TARDEC:Warren, Michigan                       | 0.000                      | -              |                       | 0.100                                                                                      |                       | 0.400                   |                       | -                      |                       | 0.400                                        | 0.000                       | 0.500                 | 0.000                                   |
| ERACC Type III Integration                                                                                                                     | MIPR                                      | TARDEC/ TACOM:Waren, Michigan                 | 0.000                      | -              |                       | 0.200                                                                                      |                       | -                       |                       | -                      |                       | -                                            | 0.000                       | 0.200                 | 0.000                                   |
| <b>Subtotal</b>                                                                                                                                |                                           |                                               | 20.779                     | 3.669          |                       | 5.351                                                                                      |                       | 0.950                   |                       | 0.000                  |                       | 0.950                                        | 0.000                       | 30.749                |                                         |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                         |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                             |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                         |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>H01: <i>Combat Engineer Eq Ed</i> |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                                         |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>               | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                         | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| System Engineering/<br>Program Mgmt                                                                                                                                  | MIPR                              | TARDEC/<br>TACOM:Warren,<br>Michigan                    | 0.000                  | -              |                   | 0.500                                                                                          |                   | 0.350               |                   | -                  |                   | 0.350                                               | 0.000                   | 0.850             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                         | 0.000                  | 0.000          |                   | 0.500                                                                                          |                   | 0.350               |                   | 0.000              |                   | 0.350                                               | 0.000                   | 0.850             | 0.000                           |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                                         |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>               | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                         | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Fuel Efficiency                                                                                                                                                      | MIPR                              | TARDEC, Warren,<br>Michigan:TARDEC,<br>Warren, Michigan | 0.000                  | -              |                   | 0.250                                                                                          |                   | -                   |                   | -                  |                   | -                                                   | 0.000                   | 0.250             | 0.000                           |
| Operational Energy/Duty<br>Cycle Monitoring                                                                                                                          | TBD                               | TARDEC:Warren,<br>Michigan                              | 0.000                  | -              |                   | 0.250                                                                                          |                   | 0.872               |                   | -                  |                   | 0.872                                               | 0.000                   | 1.122             | 0.000                           |
| Non Nuclear Soil Density<br>Set Testing                                                                                                                              | TBD                               | TARDEC:Warren, MI                                       | 0.050                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                   | 0.000                   | 0.050             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                         | 0.050                  | 0.000          |                   | 0.500                                                                                          |                   | 0.872               |                   | 0.000              |                   | 0.872                                               | 0.000                   | 1.422             | 0.000                           |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                                         | 20.829                 | 3.836          |                   | 6.351                                                                                          |                   | 2.172               |                   | 0.000              |                   | 2.172                                               | 0.000                   | 33.188            |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                                         |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                     |                         |                   |                                 |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army                                                                                                         |  |  | <b>DATE:</b> April 2013                                                                        |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |
|                                                                                                                                                                      |  |  | <b>PROJECT</b><br>H01: <i>Combat Engineer Eq Ed</i>                                            |  |  |

|                                                                      | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|----------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                                                      | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Family of All Terrain Cranes-Selection criteria & Testing of Systems |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Hazard Clearance at Speed                                            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| ERACC III integration                                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Market Research                                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| System Engineer/Program Support                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Fuel Efficiency                                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Operational Energy/Duty Cycle Monitoring                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                     | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>H01: <i>Combat Engineer Eq Ed</i> |                         |

Schedule Details

| Events                                                               | Start   |      | End     |      |
|----------------------------------------------------------------------|---------|------|---------|------|
|                                                                      | Quarter | Year | Quarter | Year |
| Family of All Terrain Cranes-Selection criteria & Testing of Systems | 1       | 2013 | 4       | 2013 |
| Hazard Clearance at Speed                                            | 1       | 2013 | 4       | 2013 |
| ERACC III integration                                                | 1       | 2013 | 4       | 2013 |
| Market Research                                                      | 1       | 2013 | 4       | 2014 |
| System Engineer/Program Support                                      | 1       | 2013 | 4       | 2014 |
| Fuel Efficiency                                                      | 1       | 2013 | 4       | 2013 |
| Operational Energy/Duty Cycle Monitoring                             | 1       | 2013 | 4       | 2014 |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|-------------------------------------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                                  |               |         |         |                                                             | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>H02: Tactical Bridging - Engineering Development |                  |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                                     | FY 2018          | Cost To Complete | Total Cost |
| H02: Tactical Bridging - Engineering Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -               | 60.403  | 9.525                | 24.374       | -                                                                                | 24.374        | 23.395  | 11.290  | 2.886                                                       | 2.935            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
| This project supports the engineering, system development and demonstration, testing and transition to procurement of Future Force Tactical Bridge Systems. Systems include the Joint Assault Bridge (JAB)and Line of Communications Bridge (LOCB). Other efforts supported include a Bridge Supplemental Set to provide better footing on muddy or soft soil conditions, as well as structural strength and fatigue testing of Bridging prototypes, development systems and validation of design modifications. This project also includes a remote controlled automatic launch for the Rapidly Emplaced Bridge System (REBS).                                            |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         | FY 2012                                                     | FY 2013          | FY 2014          |            |
| Title: BEB Testing<br><br>Description: BEB Testing<br><br>FY 2012 Accomplishments:<br>Completion of operational and development testing and logistics demonstration of the Bridge Erection Boat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         | 2.516<br>0                                                  | 0.000            | 0.000            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         | Articles:                                                   |                  |                  |            |
| Title: Development, integration, and testing of REBS Auto Launch-Retrieve with Common Bridge Transporter (CBT)<br><br>Description: Development, integration, and testing of REBS Auto Launch-Retrieve with Common Bridge Transporter (CBT)<br><br>FY 2012 Accomplishments:<br>Completion of the development, integration and testing of the Rapidly Emplaced Bridge System Auto Launch-Retrieve capability with the Common Bridge Transporter (CBT).<br><br>FY 2013 Plans:<br>Completion of the development, integration and testing of the Rapidly Emplaced Bridge System Auto Launch-Retrieve capability with the Common Bridge Transporter (CBT).<br><br>FY 2014 Plans: |                 |         |                      |              |                                                                                  |               |         |         | 1.100<br>0                                                  | 1.400<br>0       | 2.000            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         | Articles:                                                   |                  |                  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         |                                                             |                  |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                               |  |                                                                                                | <b>DATE:</b> April 2013         |                                                                           |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                             |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                                 | <b>PROJECT</b><br>H02: <i>Tactical Bridging - Engineering Development</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                          |  |                                                                                                | <b>FY 2012</b>                  | <b>FY 2013</b>                                                            | <b>FY 2014</b> |
| Completion of the development, integration and testing of the Rapidly Emplaced Bridge System Auto Launch-Retrieve capability with the Common Bridge Transporter (CBT).                                                                                           |  |                                                                                                |                                 |                                                                           |                |
| <b>Title:</b> JAB Development and Testing<br><br><b>Description:</b> JAB Development and Testing<br><br><b>FY 2012 Accomplishments:</b><br>JAB Development.<br><br><b>FY 2013 Plans:</b><br>JAB Development/Testing<br><br><b>FY 2014 Plans:</b><br>JAB Testing. |  |                                                                                                | <b>Articles:</b><br>49.810<br>0 | 7.625<br>0                                                                | 11.313         |
| <b>Title:</b> SBIR+STTR<br><br><b>Description:</b> SBIR+STTR<br><br><b>FY 2012 Accomplishments:</b><br>SBIR+STTR                                                                                                                                                 |  |                                                                                                | <b>Articles:</b><br>1.682<br>0  | 0.000                                                                     | 0.000          |
| <b>Title:</b> LOCB Development<br><br><b>Description:</b> LOCB Development<br><br><b>FY 2012 Accomplishments:</b><br>LOCB Development<br><br><b>FY 2013 Plans:</b><br>LOCB Development<br><br><b>FY 2014 Plans:</b><br>LOCB Development                          |  |                                                                                                | <b>Articles:</b><br>5.295<br>0  | 0.500<br>0                                                                | 9.735          |
| <b>Title:</b> Structural Health Monitoring                                                                                                                                                                                                                       |  |                                                                                                | 0.000                           | 0.000                                                                     | 0.750          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                               |                |                |                         |                                                                                                |                          |                | <b>DATE:</b> April 2013                                                   |                |                |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                             |                |                |                         | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                | <b>PROJECT</b><br>H02: <i>Tactical Bridging - Engineering Development</i> |                |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                          |                |                |                         |                                                                                                |                          |                | <b>FY 2012</b>                                                            | <b>FY 2013</b> | <b>FY 2014</b> |                             |                   |
| <b>Description:</b> Develop a passive method to collect mobile military bridge system usage and health data for remote monitoring.                                                                                                                                                               |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>FY 2014 Plans:</b><br>Structural Health Monitoring                                                                                                                                                                                                                                            |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>Title:</b> Bridge Supplemental Set                                                                                                                                                                                                                                                            |                |                |                         |                                                                                                |                          |                | 0.000                                                                     | 0.000          | 0.576          |                             |                   |
| <b>Description:</b> Multi-functional consolidated engineering set consisting of a multi-functional anchorage system targeted for use with multiple tactical bridging systems to include the Line of Communication Bridge (LOCB), Improved Ribbon Bridge (IRB), and the Dry Support Bridge (DSB). |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>FY 2014 Plans:</b><br>Bridge Supplemental Set                                                                                                                                                                                                                                                 |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                |                |                |                         |                                                                                                |                          |                | 60.403                                                                    | 9.525          | 24.374         |                             |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                         |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                 | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b>                                                                         | <b>FY 2014<br/>Total</b> | <b>FY 2015</b> | <b>FY 2016</b>                                                            | <b>FY 2017</b> | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • OPA3, MX0100: OPA3, MX0100                                                                                                                                                                                                                                                                     | 92.428         | 35.499         | 14.188                  |                                                                                                | 14.188                   | 12.136         | 20.997                                                                    | 21.548         | 21.914         | Continuing                  | Continuing        |
| • OPA3, MA8890: OPA3, MA8890                                                                                                                                                                                                                                                                     | 72.354         | 32.893         | 23.101                  |                                                                                                | 23.101                   | 15.766         | 13.708                                                                    | 15.509         | 15.793         | Continuing                  | Continuing        |
| • WTCV, GZ3001: WTCV, GZ3001                                                                                                                                                                                                                                                                     |                |                | 2.002                   |                                                                                                | 2.002                    | 53.928         | 55.089                                                                    | 78.402         | 170.027        | Continuing                  | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                   |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>D. Acquisition Strategy</b><br>RDT&E efforts to support testing and follow-on production.                                                                                                                                                                                                     |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |
| <b>E. Performance Metrics</b><br>Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                              |                |                |                         |                                                                                                |                          |                |                                                                           |                |                |                             |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                              |                                   |                                                                                   |                        |                |                   |                                                                                         |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                            |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                                   |                                                                                   |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>PROJECT</b><br>H02: Tactical Bridging - Engineering Development |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                    |                                   |                                                                                   |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                         | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Program Support                                                                                                                                | MIPR                              | Various:Various                                                                   | 0.000                  | -              |                   | -                                                                                       |                   | 3.000               | Nov 2013          | -                  |                   | 3.000                                                              | 0.000                   | 3.000             | 0.000                           |
| SBIR+STTR                                                                                                                                      | TBD                               | TBD:TBD                                                                           | 0.000                  | 1.682          |                   | -                                                                                       |                   | -                   |                   | -                  |                   | -                                                                  | 0.000                   | 1.682             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                |                                   |                                                                                   | 0.000                  | 1.682          |                   | 0.000                                                                                   |                   | 3.000               |                   | 0.000              |                   | 3.000                                                              | 0.000                   | 4.682             | 0.000                           |
| <b>Product Development (\$ in Millions)</b>                                                                                                    |                                   |                                                                                   |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                         | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| JAB Development                                                                                                                                | C/FFP                             | DRS/GDLS:Saint Louis, MO/Sterling Hts, MI                                         | 0.000                  | 48.128         |                   | -                                                                                       |                   | -                   |                   | -                  |                   | -                                                                  | Continuing              | Continuing        | Continuing                      |
| LOCB Development                                                                                                                               | MIPR                              | Rock Island Arsenal (RIA)/Anniston Army Depot (ANAD):Rock Island, IL/Anniston, AL | 1.123                  | 5.295          | Aug 2013          | 0.500                                                                                   |                   | -                   |                   | -                  |                   | -                                                                  | Continuing              | Continuing        | Continuing                      |
| Bridge Supplemental Set                                                                                                                        | MIPR                              | TBD:TBD                                                                           | 0.000                  | -              |                   | -                                                                                       |                   | 0.326               | Jan 2014          | -                  |                   | 0.326                                                              | 0.000                   | 0.326             | 0.000                           |
| Structural Health Monitoring                                                                                                                   | MIPR                              | TARDEC:Warren, MI                                                                 | 0.000                  | -              |                   | -                                                                                       |                   | 0.500               | Jan 2014          | -                  |                   | 0.500                                                              | 0.000                   | 0.500             | 0.000                           |
| REBS Testing (Auto Launch-Retrieve)                                                                                                            | SS/FFP                            | General Dynamics European Land Systems:Kaiserslautern, Germany                    | 0.000                  | -              |                   | -                                                                                       |                   | 1.000               | Jun 2014          | -                  |                   | 1.000                                                              | 0.000                   | 1.000             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                |                                   |                                                                                   | 1.123                  | 53.423         |                   | 0.500                                                                                   |                   | 1.826               |                   | 0.000              |                   | 1.826                                                              |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                |                                   |                                                                                   |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                               |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                         | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                        | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Govenment In-House                                                                                                                             | MIPR                              | TACOM:Warren, MI                                                                  | 2.100                  | 3.000          | Dec 2011          | 3.000                                                                                   |                   | -                   |                   | -                  |                   | -                                                                  | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                |                                   |                                                                                   | 2.100                  | 3.000          |                   | 3.000                                                                                   |                   | 0.000               |                   | 0.000              |                   | 0.000                                                              |                         |                   |                                 |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                              |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                                   |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                              |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>H02: <i>Tactical Bridging - Engineering Development</i> |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                              |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                      |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>    | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                               | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| JAB Testing                                                                                                                                                          | MIPR                              | Aberdeen Proving Grounds (APG):APG, Maryland | 2.541                  | -              |                   | 5.125                                                                                          |                   | 10.063              | Jan 2014          | -                  |                   | 10.063                                                                    | Continuing              | Continuing        | Continuing                      |
| REBS Testing (Auto Launch-Retrieve)                                                                                                                                  | TBD                               | Aberdeen Proving Grounds (APG):APG, MD       | 0.000                  | 1.100          | Feb 2012          | 0.900                                                                                          |                   | 1.000               | Jan 2014          | -                  |                   | 1.000                                                                     | 0.000                   | 3.000             | 0.000                           |
| BEB Testing                                                                                                                                                          | Various                           | Various:Various                              | 5.230                  | 1.198          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                         | 0.000                   | 6.428             | 0.000                           |
| LOCB Testing                                                                                                                                                         | MIPR                              | ATEC:Aberdeen, MD                            | 4.800                  | -              |                   | -                                                                                              |                   | 8.485               | Jan 2014          | -                  |                   | 8.485                                                                     | 0.000                   | 13.285            | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                              | 12.571                 | 2.298          |                   | 6.025                                                                                          |                   | 19.548              |                   | 0.000              |                   | 19.548                                                                    |                         |                   |                                 |
|                                                                                                                                                                      |                                   |                                              | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                      | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                              | 15.794                 | 60.403         |                   | 9.525                                                                                          |                   | 24.374              |                   | 0.000              |                   | 24.374                                                                    |                         |                   |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                              |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                                           |                         |                   |                                 |

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**Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army**

DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**

2040: Research, Development, Test & Evaluation, Army  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0604804A: *Logistics and Engineer  
Equipment - Eng Dev*

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|  | <b>PROJECT</b> |
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H02: *Tactical Bridging - Engineering Development*

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                                           | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>H02: <i>Tactical Bridging - Engineering Development</i> |                         |

Schedule Details

| Events                               | Start   |      | End     |      |
|--------------------------------------|---------|------|---------|------|
|                                      | Quarter | Year | Quarter | Year |
| LOCB Development and Testing         | 2       | 2012 | 4       | 2016 |
| REBS Auto Launch-Retrieve            | 3       | 2012 | 4       | 2015 |
| SBIR Technology Transition           | 1       | 2014 | 4       | 2018 |
| Bridge Supplemental Set              | 2       | 2014 | 4       | 2015 |
| Structural Health Monitoring Project | 2       | 2014 | 4       | 2016 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   | DATE: April 2013                                                                                                                                                                                                                                       |                     |               |  |  |  |  |  |  |  |            |            |       |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>H14: Materials Handling Equipment - Ed |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO <sup>##</sup>                                                        | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                           | FY 2018                                                                                                                                                                                                                                                | Cost To<br>Complete | Total<br>Cost |  |  |  |  |  |  |  |            |            |       |
| H14: Materials Handling<br>Equipment - Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -                  | 1.613   | 1.415                | 0.298           | -                                                                                   | 0.298            | 0.576   | 0.986   | 0.964                                             | 0.615                                                                                                                                                                                                                                                  | Continuing          | Continuing    |  |  |  |  |  |  |  |            |            |       |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| This project supports system development and demonstration of Material Handling Equipment (MHE) including Rough Terrain Forklifts, Container Handling Equipment, and other cargo handling related items to enable Combat Service Support units to rapidly and efficiently move and deliver critical supplies worldwide to the Soldier. Efforts performed under this project include conducting market research, supporting operational requirements identification and validation, conducting trade studies, generating life cycle cost estimates, performing system engineering, developing performance specifications, conducting pre-production test and evaluation, and preparing program management and acquisition documents. |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   |                                                                                                                                                                                                                                                        |                     |               |  |  |  |  |  |  |  |            |            |       |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   | FY 2012                                                                                                                                                                                                                                                | FY 2013             | FY 2014       |  |  |  |  |  |  |  |            |            |       |
| Title: Material Handling Equipment (MHE) Training Aids<br><br>Articles:<br><br>Description: Material Handling Equipment (MHE) Training Aids<br><br>FY 2012 Accomplishments:<br>Continue upgrade of Rough Terrain Container Handler (RTCH) Electronic Training Aid. Conduct design verification testing                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   | 1.116<br>0                                                                                                                                                                                                                                             | 0.000               | 0.000         |  |  |  |  |  |  |  |            |            |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   | Title: Small Business Innovative Research/Small Business Technology Transfer Program<br><br>Articles:<br><br>Description: Small Business Innovative Research/Small Business Technology Transfer Program<br><br>FY 2012 Accomplishments:<br>SBIR + STTR |                     |               |  |  |  |  |  |  |  | 0.032<br>0 | 0.000      | 0.000 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |         |                      |                 |                                                                                     |                  |         |         |                                                   | Title: Material Handling Equipment (MHE) System Improvement<br><br>Articles:<br><br>Description: System Improvements for Light Capability Rough Terrain Forklift (LCRTF) for Tactical Operations<br><br>FY 2013 Plans:                                 |                     |               |  |  |  |  |  |  |  | 0.000      | 0.655<br>0 | 0.155 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                  |         |         |                 |                                                                                     |                  |         |         |                                                   | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                  |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>H14: Materials Handling Equipment - Ed |                  |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                         |         |         |                 |                                                                                     |                  |         |         |                                                   | FY 2012          | FY 2013             | FY 2014    |
| Design and test air drop configuration package for the LCRTF.                                                                                            |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2014 Plans:<br>Integrate and test add-on hardware for reliable cold starting.                                                                         |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| Title: Material Handling Equipment (MHE) Armor Kits                                                                                                      |         |         |                 |                                                                                     |                  |         |         |                                                   | 0.353            | 0.460               | 0.143      |
| Articles:                                                                                                                                                |         |         |                 |                                                                                     |                  |         |         |                                                   | 0                | 0                   |            |
| Description: Lightweight Armor for All Terrain Lifter Army System (ATLAS) II                                                                             |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2012 Accomplishments:<br>N/A                                                                                                                          |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2013 Plans:<br>Investigate alternative armor solutions to eliminate known performance degradation when operated with current add on armor.            |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2014 Plans:<br>Conduct evaluation of armor solution at test-site for both performance and survivability                                               |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| Title: Sling Load Attachment for Rough Terrain Container Handler (RTCH)                                                                                  |         |         |                 |                                                                                     |                  |         |         |                                                   | 0.112            | 0.300               | 0.000      |
| Articles:                                                                                                                                                |         |         |                 |                                                                                     |                  |         |         |                                                   | 0                | 0                   |            |
| Description: Sling Load Attachment for Rough Terrain Container Handler (RTCH)                                                                            |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2012 Accomplishments:<br>N/A                                                                                                                          |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| FY 2013 Plans:<br>Conduct demonstrations and evaluations of proposed Sling Load Attachment to assess operational suitability and value added capability. |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                                               |         |         |                 |                                                                                     |                  |         |         |                                                   | 1.613            | 1.415               | 0.298      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                        |         |         |                 |                                                                                     |                  |         |         |                                                   |                  |                     |            |
| Line Item                                                                                                                                                | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                           | FY 2018          | Cost To<br>Complete | Total Cost |
| • OPA M41200: Rough Terrain<br>Container Handler                                                                                                         |         |         | 1.250           |                                                                                     | 1.250            |         |         |                                                   |                  | 0.000               | 1.250      |
| • OPA M41800: All Terrain Lifting<br>Army System                                                                                                         | 23.659  |         | 2.500           |                                                                                     | 2.500            |         |         |                                                   |                  | 0.000               | 26.159     |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                |                |                                                                                                |                |                |                                                                 |                | <b>DATE:</b> April 2013 |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                  |                |                |                |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                |                | <b>PROJECT</b><br>H14: <i>Materials Handling Equipment - Ed</i> |                |                         |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                | <u>FY 2014</u> | <u>FY 2014</u> | <u>FY 2014</u>                                                                                 |                |                |                                                                 |                | <u>Cost To</u>          |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>FY 2012</u> | <u>FY 2013</u> | <u>Base</u>    | <u>OCO</u>     | <u>Total</u>                                                                                   | <u>FY 2015</u> | <u>FY 2016</u> | <u>FY 2017</u>                                                  | <u>FY 2018</u> | <u>Complete</u>         | <u>Total Cost</u> |
| • OPA G41002: <i>Light Capacity Rough Terrain (LCRT) Forklift</i>                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.944         | 5.895          | 5.760          |                | 5.760                                                                                          | 5.898          | 6.117          | 6.240                                                           | 6.420          | Continuing              | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |
| Develop specifications for LCRTF improvements, award contracts to produce test items for production verification testing. Testing LCRTF improvements to be performed using Army test facilities. Design lightweight armor solution for ATLAS using U.S. Army TARDEC's Center for Ground Vehicle Development and Integration. Test armored ATLAS at Aberdeen Proving Ground, MD. Procure RTCH Sling Load Attachment, obtain safety confirmation and conduct user demonstrations to valid requirements. |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                                                                                                                                                                                                                    |                |                |                |                |                                                                                                |                |                |                                                                 |                |                         |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                              |                                           |                                               |                            |                |                       |                                                                                            |                       |                         |                       |                        |                       | <b>DATE:</b> April 2013                                  |                             |                       |                                         |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                                           |                                               |                            |                |                       | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                       |                         |                       |                        |                       | <b>PROJECT</b><br>H14: Materials Handling Equipment - Ed |                             |                       |                                         |
| <b>Management Services (\$ in Millions)</b>                                                                                                    |                                           |                                               |                            | <b>FY 2012</b> |                       | <b>FY 2013</b>                                                                             |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b>                                 |                             |                       |                                         |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>                                                                                | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>                                              | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| System Engineering/<br>Program Management                                                                                                      | MIPR                                      | TARDEC:Warren, MI                             | 0.000                      | -              |                       | -                                                                                          |                       | 0.037                   |                       | -                      |                       | 0.037                                                    | 0.000                       | 0.037                 | 0.000                                   |
| SBIR + STTR                                                                                                                                    | TBD                                       | TBD:TBD                                       | 0.000                      | 0.032          |                       | -                                                                                          |                       | -                       |                       | -                      |                       | -                                                        | 0.000                       | 0.032                 | 0.000                                   |
| <b>Subtotal</b>                                                                                                                                |                                           |                                               | 0.000                      | 0.032          |                       | 0.000                                                                                      |                       | 0.037                   |                       | 0.000                  |                       | 0.037                                                    | 0.000                       | 0.069                 | 0.000                                   |
| <b>Product Development (\$ in Millions)</b>                                                                                                    |                                           |                                               |                            | <b>FY 2012</b> |                       | <b>FY 2013</b>                                                                             |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b>                                 |                             |                       |                                         |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>                                                                                | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>                                              | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| MHE Training Aids                                                                                                                              | MIPR                                      | Kalmar Rt:Cibolo, TX                          | 0.974                      | 1.581          |                       | -                                                                                          |                       | -                       |                       | -                      |                       | -                                                        | Continuing                  | Continuing            | Continuing                              |
| System Improvements<br>for LCRTF for Tactical<br>Operations                                                                                    | Various                                   | TBD:TBD                                       | 0.000                      | -              |                       | 0.200                                                                                      |                       | 0.155                   |                       | -                      |                       | 0.155                                                    | 0.000                       | 0.355                 | 0.000                                   |
| Lightweight Armor for<br>ATLAS II                                                                                                              | MIPR                                      | TARDEC:Warren, MI                             | 0.000                      | -              |                       | 0.350                                                                                      |                       | -                       |                       | -                      |                       | -                                                        | 0.000                       | 0.350                 | 0.000                                   |
| Sling Load Attachment for<br>RTCH                                                                                                              | Reqn                                      | Kalmar RT<br>Center:Cibolo, TX                | 0.000                      | -              |                       | 0.100                                                                                      |                       | -                       |                       | -                      |                       | -                                                        | 0.000                       | 0.100                 | 0.000                                   |
| <b>Subtotal</b>                                                                                                                                |                                           |                                               | 0.974                      | 1.581          |                       | 0.650                                                                                      |                       | 0.155                   |                       | 0.000                  |                       | 0.155                                                    |                             |                       |                                         |
| <b>Support (\$ in Millions)</b>                                                                                                                |                                           |                                               |                            | <b>FY 2012</b> |                       | <b>FY 2013</b>                                                                             |                       | <b>FY 2014<br/>Base</b> |                       | <b>FY 2014<br/>OCO</b> |                       | <b>FY 2014<br/>Total</b>                                 |                             |                       |                                         |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract<br/>Method<br/>&amp; Type</b> | <b>Performing<br/>Activity &amp; Location</b> | <b>All Prior<br/>Years</b> | <b>Cost</b>    | <b>Award<br/>Date</b> | <b>Cost</b>                                                                                | <b>Award<br/>Date</b> | <b>Cost</b>             | <b>Award<br/>Date</b> | <b>Cost</b>            | <b>Award<br/>Date</b> | <b>Cost</b>                                              | <b>Cost To<br/>Complete</b> | <b>Total<br/>Cost</b> | <b>Target<br/>Value of<br/>Contract</b> |
| System Improvements<br>for LCRTF for Tactical<br>Operations                                                                                    | MIPR                                      | TARDEC:Warren, MI                             | 0.000                      | -              |                       | 0.055                                                                                      |                       | -                       |                       | -                      |                       | -                                                        | 0.000                       | 0.055                 | 0.000                                   |
| Lightweight Armor for<br>ATLAS II                                                                                                              | MIPR                                      | TARDEC:Warren, MI                             | 0.000                      | -              |                       | 0.110                                                                                      |                       | -                       |                       | -                      |                       | -                                                        | 0.000                       | 0.110                 | 0.000                                   |
| <b>Subtotal</b>                                                                                                                                |                                           |                                               | 0.000                      | 0.000          |                       | 0.165                                                                                      |                       | 0.000                   |                       | 0.000                  |                       | 0.000                                                    | 0.000                       | 0.165                 | 0.000                                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army                                                                                                    |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                         |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>H14: <i>Materials Handling Equipment - Ed</i> |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                            |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                     | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Lightweight Armor for ATLAS II                                                                                                                                       | TBD                               | TBD:TBD                                   | 0.000                  | -              |                   | -                                                                                              |                   | 0.106               |                   | -                  |                   | 0.106                                                           | 0.000                   | 0.106             | 0.000                           |
| System Improvements for LCRTF for Tactical Operations                                                                                                                | TBD                               | TBD:TBD                                   | 0.000                  | -              |                   | 0.400                                                                                          |                   | -                   |                   | -                  |                   | -                                                               | 0.000                   | 0.400             | 0.000                           |
| Sling Load Attachment for RTCH                                                                                                                                       | MIPR                              | Various:Various                           | 0.000                  | -              |                   | 0.200                                                                                          |                   | -                   |                   | -                  |                   | -                                                               | 0.000                   | 0.200             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 0.000                  | 0.000          |                   | 0.600                                                                                          |                   | 0.106               |                   | 0.000              |                   | 0.106                                                           | 0.000                   | 0.706             | 0.000                           |
|                                                                                                                                                                      |                                   |                                           | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                            | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                           | 0.974                  | 1.613          |                   | 1.415                                                                                          |                   | 0.298               |                   | 0.000              |                   | 0.298                                                           |                         |                   |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                                 |                         |                   |                                 |

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|-----------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|-------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|---------------------------------------------------|--|--|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army                                                                                       |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  | DATE: April 2013                                  |  |  |  |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |  |  |  |  |  |  |  |  |  |  |  | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |  |  |  |  |  |  |  |  |  |  |  | PROJECT<br>H14: Materials Handling Equipment - Ed |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |
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|                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |                                                                                     |  |  |  |  |  |  |  |  |  |  |  |                                                   |  |  |  |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                                 | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>H14: <i>Materials Handling Equipment - Ed</i> |                         |

Schedule Details

| Events                                               | Start   |      | End     |      |
|------------------------------------------------------|---------|------|---------|------|
|                                                      | Quarter | Year | Quarter | Year |
| Design and test LCRTF air drop configuration package | 3       | 2013 | 3       | 2013 |
| Integrate and test LCRTF cold weather start kit      | 1       | 2014 | 1       | 2014 |
| Investigate alternative armor solution for ATLAS II  | 1       | 2013 | 1       | 2013 |
| Conduct evaluation of armor solution at test-site    | 2       | 2014 | 2       | 2014 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                                  |               |         |         | DATE: April 2013                             |         |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>L39: Field Sustainment Support Ed |         |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                      | FY 2018 | Cost To Complete | Total Cost |
| L39: Field Sustainment Support Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -               | 4.094   | 2.550                | 1.789        | -                                                                                | 1.789         | 2.753   | 2.588   | 2.269                                        | 2.456   | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| This project supports the System Development and Demonstration (SDD) of critical distribution and sustainment capabilities to include cargo aerial delivery, field shelters, showers, latrines, heaters, mortuary affairs systems, organizational equipment, and other combat service support equipment to fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports the demonstration of engineering development models and Type Classification of cargo parachutes, airdrop containers and other aerial delivery equipment to improve safety, effectiveness, and efficiency of airborne operations. Project supports development of tactical field systems and support equipment such as heaters, camouflage systems and base camp equipment. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and the Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment by providing aerial delivery initiatives. These reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS), lift demands, the combat zone footprint, and costs for logistical support. |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                                  |               |         |         | FY 2012                                      | FY 2013 | FY 2014          |            |
| Title: Joint Precision Airdrop System P3I (JPADS)<br><br>Articles:<br><br>Description: JPADS is a Precision Guided Airdrop system that autonomously navigates along a predetermined glide and flight path to accurately deliver supplies and equipment. Its two primary components, a decelerator and an Autonomous Guidance Unit (AGU), interface with the United States Air Force (USAF) JPADS mission planner and has a gross rigged weight of 2,400 pounds (lbs) to 10,000 lbs.<br><br>FY 2012 Accomplishments:<br>Continue JPADS 2K product improvement efforts to integrate advanced hardware and software capabilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                                  |               |         |         | 1.497<br>0                                   | 0.000   | 0.000            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |
| Title: Joint Precision Airdrop System 10,000 lbs. (JPADS 10K)<br><br>Articles:<br><br>Description: JPADS 10K is a Precision Guided Airdrop system that autonomously navigates along a predetermined glide and flight path to accurately deliver supplies and equipment. It utilizes two primary components, a JPADS 10K air vehicle's decelerator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         | 1.400<br>0                                   | 0.000   | 0.000            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                                  |               |         |         |                                              |         |                  |            |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     | DATE: April 2013                             |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L39: Field Sustainment Support Ed |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     | FY 2012                                      | FY 2013    | FY 2014 |
| connected to an Autonomous Guided Unit (AGU) which interface with the USAF JPADS Mission Planner, and has a maximum gross rigged weight of 10,000 lbs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                              |            |         |
| FY 2012 Accomplishments:<br>Complete Operational Testing (OT) and obtain Milestone C for JPADS 10K.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |                                              |            |         |
| Title: Advanced Low Velocity Airdrop System (ALVADS) - Light and Heavy<br><br>Articles:<br><br>Description: ALVADS - Light and Heavy are capable of airdrop operations at an altitude of 500-ft Above Ground Level (AGL) with increased aircraft survivability, and improved accuracy. Light-Gross rigged weight of 2,520-22,000 lbs and Heavy-Gross rigged weight of 22,001-42,000 lbs.<br><br>FY 2013 Plans:<br>Complete Design Validation (DV) for ALVADS-L and initiate Developmental Testing (DT).<br><br>FY 2014 Plans:<br>Initiate fabrication of Developmental Testing (DT) assets for ALVADS.                                                                                                                                                                                                                           |                                                                                     | 0.000                                        | 2.000<br>0 | 1.789   |
| Title: Low Cost Aerial Delivery System (LCADS)<br><br>Articles:<br><br>Description: LCADS is a modular suite of low cost, expendable parachute/container air items that can be used in lieu of current low and high velocity systems. System includes a low cost container, high-velocity parachute (70 - 90 feet per second (fps)) and low-velocity parachute (less than 28.5 fps). System is compatible with United States Air Force Aircraft (USAF A/C) and aerial port handling equipment. LCADS is a proven means to execute critical resupply missions without having to place soldiers and ground vehicle convoys on the road.<br><br>FY 2012 Accomplishments:<br>Execute LCADS product improvement efforts with focus on modular capability that spans weights and altitudes for low velocity and high velocity systems. |                                                                                     | 1.068<br>0                                   | 0.000      | 0.000   |
| Title: Advanced Cargo Parachute Release System (ACPRS)<br><br>Articles:<br><br>Description: The ACPRS will replace the existing M-1 and M-2 cargo parachute release and is intended to decrease the number of inoperable payloads due to rollovers, while also providing a capability to airdrop loads at 500 ft Above Ground Level (AGL).<br><br>FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     | 0.000                                        | 0.550<br>0 | 0.000   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                   |                |                |                         |                                                                                                |                          |                |                | <b>DATE:</b> April 2013                                    |                |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                |                |                         | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>PROJECT</b><br>L39: <i>Field Sustainment Support Ed</i> |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                              |                |                |                         |                                                                                                |                          |                |                | <b>FY 2012</b>                                             | <b>FY 2013</b> | <b>FY 2014</b>              |                   |
| Obtain Milestone C on ACPRS and initiate pre-planned product improvement effort.                                                                                     |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| <b>Title:</b> SBIR+STTR<br><br><b>Description:</b> SBIR+STTR<br><br><b>FY 2012 Accomplishments:</b><br>SBIR+STTR                                                     |                |                |                         |                                                                                                |                          |                |                | <b>Articles:</b><br><br>0.129<br>0                         | 0.000          | 0.000                       |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                    |                |                |                         |                                                                                                |                          |                |                | 4.094                                                      | 2.550          | 1.789                       |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                             |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| <b>Line Item</b>                                                                                                                                                     | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b>                                                                         | <b>FY 2014<br/>Total</b> | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017</b>                                             | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • MA7806: <i>Precision Airdrop, OPA 3,</i>                                                                                                                           | 16.207         | 5.935          | 9.500                   |                                                                                                | 9.500                    | 7.209          | 7.395          | 7.400                                                      | 5.628          | Continuing                  | Continuing        |
| • 643804 K39: <i>Field Sustainment Support AD,</i>                                                                                                                   | 2.857          | 2.970          | 2.161                   |                                                                                                | 2.161                    | 3.061          | 3.434          | 2.727                                                      | 2.801          | Continuing                  | Continuing        |
| • 643804 VR8: <i>Combat Service Support Systems AD,</i>                                                                                                              | 1.977          | 2.023          | 1.613                   |                                                                                                | 1.613                    | 2.405          | 2.619          | 2.415                                                      | 2.415          | Continuing                  | Continuing        |
| • 654804 VR7: <i>Combat Service Support Systems,</i>                                                                                                                 | 2.465          | 1.745          | 1.193                   |                                                                                                | 1.193                    | 1.965          | 2.054          | 1.915                                                      | 1.915          | Continuing                  | Continuing        |
| <b>Remarks</b>                                                                                                                                                       |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                       |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| Accelerate product development and testing to transition into production.                                                                                            |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| <b>E. Performance Metrics</b>                                                                                                                                        |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.   |                |                |                         |                                                                                                |                          |                |                |                                                            |                |                             |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                    |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L39: <i>Field Sustainment Support Ed</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Project Management Support                                                                                                                                           | Various                           | PM FSS, Natick:Natick, MA                 | 1.823                  | 0.370          |                   | 0.400                                                                                          |                   | 0.431               |                   | -                  |                   | 0.431                                                      | 0.000                   | 3.024             | Continuing                      |
| SBIR+STTR                                                                                                                                                            | TBD                               | Various:Various                           | 0.000                  | 0.129          |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 0.129             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 1.823                  | 0.499          |                   | 0.400                                                                                          |                   | 0.431               |                   | 0.000              |                   | 0.431                                                      | 0.000                   | 3.153             |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Soldier Support Equipment                                                                                                                                            | Various                           | PM FSS, Natick:Various                    | 3.867                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 3.867             | 0.000                           |
| ALVADS-L&H                                                                                                                                                           | Various                           | Various:Various                           | 14.003                 | -              |                   | 0.400                                                                                          |                   | 1.108               |                   | -                  |                   | 1.108                                                      | 0.000                   | 15.511            | Continuing                      |
| JPADS P3I                                                                                                                                                            | Various                           | Various:Various                           | 5.270                  | 0.500          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 5.770             | Continuing                      |
| LCADS P3I efforts                                                                                                                                                    | Various                           | Various:Various                           | 0.750                  | 0.200          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 0.950             | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 23.890                 | 0.700          |                   | 0.400                                                                                          |                   | 1.108               |                   | 0.000              |                   | 1.108                                                      | 0.000                   | 26.098            |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                       |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Soldier Support Equipment                                                                                                                                            | Various                           | Yuma Proving Ground (YPG), AZ, AEC:AZ     | 9.079                  | 0.671          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 9.750             | Continuing                      |
| JPADS P3I                                                                                                                                                            | Various                           | Yuma Proving Ground, AZ:Yuma, AZ          | 0.000                  | 0.500          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 0.500             | 0.000                           |
| JPADS 10K OT                                                                                                                                                         | Various                           | GSA:GSA                                   | 0.108                  | 0.828          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 0.936             | Continuing                      |
| ACPRS                                                                                                                                                                | Various                           | Yuma Proving Ground, AZ:Yuma, AZ          | 0.000                  | -              |                   | 0.500                                                                                          |                   | -                   |                   | -                  |                   | -                                                          | 0.000                   | 0.500             | 0.000                           |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army                                                                                                    |  |  |  |  |  |  |                                                                                                |  |  |  |  |                                                            | <b>DATE:</b> April 2013 |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  |  |  |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  |  | <b>PROJECT</b><br>L39: <i>Field Sustainment Support Ed</i> |                         |  |  |

  

| Test and Evaluation (\$ in Millions) |                              |                                          |                    | FY 2012 |               | FY 2013 |               | FY 2014<br>Base |               | FY 2014<br>OCO |               | FY 2014<br>Total |                     |               |                                |
|--------------------------------------|------------------------------|------------------------------------------|--------------------|---------|---------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|---------------|--------------------------------|
| Cost Category Item                   | Contract<br>Method<br>& Type | Performing<br>Activity & Location        | All Prior<br>Years | Cost    | Award<br>Date | Cost    | Award<br>Date | Cost            | Award<br>Date | Cost           | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| ALVADS-L&H                           | Various                      | YPG, AZ/ OTC,<br>NC: YPG, AZ/ OTC,<br>NC | 2.642              | 0.896   | Dec 2011      | 1.250   |               | 0.250           |               | -              |               | 0.250            | 0.000               | 5.038         | Continuing                     |
| <b>Subtotal</b>                      |                              |                                          | 11.829             | 2.895   |               | 1.750   |               | 0.250           |               | 0.000          |               | 0.250            | 0.000               | 16.724        |                                |

  

|                            | All Prior<br>Years | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO | FY 2014<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
|----------------------------|--------------------|---------|---------|-----------------|----------------|------------------|---------------------|---------------|--------------------------------|
| <b>Project Cost Totals</b> | 37.542             | 4.094   | 2.550   | 1.789           | 0.000          | 1.789            | 0.000               | 45.975        |                                |

  

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Army **DATE:** April 2013

|                                                                                                                                                                      |                                                                                                |                                                            |
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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L39: <i>Field Sustainment Support Ed</i> |
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|                                                                           | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|---------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                                                           | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Milestone C (MS C) Joint Precision Airdrop System (JPADS) 10K             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Milestone C on Advanced Cargo Parachute Release System (ACPRS)            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Milestone C (MS C) on Helicopter External/Internal Cargo Delivery         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Complete Advanced Low Velocity Airdrop System (ALVADS) DV Testing         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct Developmental Testing/Operational Testing DT/OT on ALVADS-L       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Obtain MS C for Space Heater Convective 90K British Thermal Unit per hour |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct Design Validation ALVADS-L                                        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct follow on testing ACPRS P3I                                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct MS C on ALVADS-L                                                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct MS C on ALVADS-H                                                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Fabricate OT test assets/begin OT on HSCDS                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Complete OT for HSCDS                                                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Complete Milestone C/TC STD on HSCDS                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Complete DT/OT/Milestone C on Next Generation LCADS                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                            | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L39: <i>Field Sustainment Support Ed</i> |                         |

## Schedule Details

| Events                                                                    | Start   |      | End     |      |
|---------------------------------------------------------------------------|---------|------|---------|------|
|                                                                           | Quarter | Year | Quarter | Year |
| Milestone C (MS C) Joint Precision Airdrop System (JPADS) 10K             | 3       | 2012 | 3       | 2012 |
| Milestone C on Advanced Cargo Parachute Release System (ACPRS)            | 1       | 2013 | 1       | 2013 |
| Milestone C (MS C) on Helicopter External/Internal Cargo Delivery         | 3       | 2017 | 3       | 2017 |
| Complete Advanced Low Velocity Airdrop System (ALVADS) DV Testing         | 1       | 2014 | 1       | 2015 |
| Conduct Developmental Testing/Operational Testing DT/OT on ALVADS-L       | 2       | 2015 | 3       | 2016 |
| Obtain MS C for Space Heater Convective 90K British Thermal Unit per hour | 4       | 2012 | 4       | 2012 |
| Conduct Design Validation ALVADS-L                                        | 1       | 2013 | 2       | 2013 |
| Conduct follow on testing ACPRS P3I                                       | 1       | 2013 | 4       | 2013 |
| Conduct MS C on ALVADS-L                                                  | 4       | 2016 | 4       | 2016 |
| Conduct MS C on ALVADS-H                                                  | 4       | 2016 | 4       | 2016 |
| Fabricate OT test assets/begin OT on HSCDS                                | 2       | 2016 | 4       | 2016 |
| Complete OT for HSCDS                                                     | 1       | 2017 | 4       | 2017 |
| Complete Milestone C/TC STD on HSCDS                                      | 2       | 2018 | 2       | 2018 |
| Complete DT/OT/Milestone C on Next Generation LCADS                       | 3       | 2017 | 4       | 2018 |

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|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|-------------------------------------------------------|------------------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                 |                 |         |                      |              |                                                                                  |               |         |         |                                                       | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>L41: Water And Petroleum Distribution - Ed |                  |                  |            |
| COST (\$ in Millions)                                                                                                                   | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                               | FY 2018          | Cost To Complete | Total Cost |
| L41: Water And Petroleum Distribution - Ed                                                                                              | -               | 2.012   | 3.839                | 2.650        | -                                                                                | 2.650         | 4.186   | 4.106   | 3.789                                                 | 3.817            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                                       |                  |                  |            |

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

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

Description: This project provides all services with ample supply of clean fuel and water. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and must supply bulk drinking water to the soldiers. This System Development and Demonstration (SDD) program enables the Army to improve maneuver sustainment operations to meet the demands of the Stryker Brigade Combat Teams and Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of aircraft. The mission covers purification, storage, distribution, and quality control of water. The Army cannot fight without clean fuel and water. These Research and Development (R&D) missions support the development and enhancement of rapidly deployed Petroleum and Water equipment which enables the Army to achieve its vision by providing a highly mobile and self-sustaining system in hostile theaters of operation.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|
| <b>Title:</b> Water System Capability Improvements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.300          | 0.250          | 0.000          |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0              | 0              |                |
| <b>Description:</b> Funding is provided for the following effort                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                |
| <b>FY 2012 Accomplishments:</b><br>Continue integration of product improvements and conduct system level testing and evaluation of improved Tactical Water Purification System (TWPS) and Lightweight Water Purification system (LWP) and Reverse Osmosis Water Purification Unit (ROWPU), Load Handling System Water Tank Rack (HIPPO) system and the Unit Water Pod (Camel II) system. Based on component testing results, perform engineering integration analysis and system design to incorporate in-line water quality monitoring and perform technical and operational testing on TWPS, LWPs and ROWPUs. Prepare technical data to incorporate improved components into production units and to support system modernization through spares. |                |                |                |
| <b>FY 2013 Plans:</b><br>Continue integration of product improvements and conduct system level testing and evaluation of improved Tactical Water Purification System (TWPS) and Lightweight Water Purification system (LWP) and Reverse Osmosis Water Purification Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                     | DATE: April 2013                                      |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                    | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L41: Water And Petroleum Distribution - Ed |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     | FY 2012                                               | FY 2013    | FY 2014 |
| (ROWPU), Load Handling System Water Tank Rack (HIPPO) system and the Unit Water Pod (Camel II) system. Based on component testing results, perform engineering integration analysis and system design to incorporate in-line water quality monitoring and perform technical and operational testing on TWPS, LWPs and ROWPUs. Prepare technical data to incorporate improved components into production units and to support system modernization through spares.                                                                                                                          |                                                                                     |                                                       |            |         |
| Title: Fuel System Supply Point (FSSP) Improvements.<br><br>Description: Funding is provided for the following effort<br><br>FY 2012 Accomplishments:<br>Common Pump testing.<br><br>FY 2013 Plans:<br>Market Investigation for Family of Meters and On Board Truck Capability.<br><br>FY 2014 Plans:<br>Address the Army's capability gap for automated gauging to capture fuel quantities in collapsible tanks in the Fuel System Supply Point (FSSP). This includes the development of a data device that will transmit and store the data internally and externally to higher command. |                                                                                     | Articles:<br><br>0.550<br>0                           | 0.624<br>0 | 0.500   |
| Title: 3K Tactical Water Purification System (TWPS).<br><br>Description: Funding is provided for the following effort<br><br>FY 2013 Plans:<br>Initiate the development of a 3K TWPS Technical Data Package (TDP); Begin fabrication.                                                                                                                                                                                                                                                                                                                                                      |                                                                                     | Articles:<br><br>0.000                                | 0.535<br>0 | 0.000   |
| Title: Integration of component level improvements at the system level for the Fuel System Supply Point (FSSP).<br><br>Description: Funding is provided for the following effort<br><br>FY 2013 Plans:<br>The Fuel System Supply Points (FSSPs) has two different pumps, the 350 Gallon Per Minute (GPM) and the 600 GPM . These pumps will be replaced with one common pump to provide commonality across the fleet. Build the common pump prototypes for testing. In line fuel monitoring testing.<br><br>FY 2014 Plans:                                                                 |                                                                                     | Articles:<br><br>0.000                                | 0.700<br>0 | 0.540   |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     | DATE: April 2013                                      |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                        | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L41: Water And Petroleum Distribution - Ed |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     | FY 2012                                               | FY 2013    | FY 2014 |
| Finalize the technical manuals and technical data package (drawing package). The technical data package will allow the Army to competitively procure the common pump in the future. Complete testing.                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                                       |            |         |
| Title: Expeditionary Water Packaging System (EWPS).<br><br>Description: Funding is provided for the following effort<br><br>FY 2012 Accomplishments:<br>Continue development of Expeditionary Water Packaging System (EWPS).<br><br>FY 2013 Plans:<br>Test automated EWPS and finalize Purchase Description (PD) and prepare Request for Proposal (RFP).<br><br>FY 2014 Plans:<br>Complete testing of automated EWPS. Prepare Milestone C decision documents and prepare for review. Develop production contract and supporting documentation. |                                                                                     | Articles:<br>0.600<br>0                               | 0.524<br>0 | 0.960   |
| Title: Modular Tactical Refueling System (MTRS)<br><br>Description: Funding is provided for the following effort.<br><br>FY 2012 Accomplishments:<br>Test and evaluation of the Modular Tactical Refueling System (MTRS).<br><br>FY 2013 Plans:<br>Assemble two Modular Tactical Refueling Systems (MTRS) for testing.<br><br>FY 2014 Plans:<br>Complete test, technical manuals and technical data package (drawing package) . The technical data package will allow the Army to competitively procure the MTRS in the future.                |                                                                                     | Articles:<br>0.500<br>0                               | 0.700<br>0 | 0.650   |
| Title: Camel II (800 gallon watertank)<br><br>Description: Perform operational testing on Camel II prototypes<br><br>FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     | Articles:<br>0.000                                    | 0.506<br>0 | 0.000   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                  |                |                |                         |                                                                                                |                          |                |                | <b>DATE:</b> April 2013                                             |                |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                |                |                |                         | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>PROJECT</b><br>L41: <i>Water And Petroleum Distribution - Ed</i> |                |                             |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                             |                |                |                         |                                                                                                |                          |                |                | <b>FY 2012</b>                                                      | <b>FY 2013</b> | <b>FY 2014</b>              |                   |
| Perform operational testing on Camel II.                                                                                                                                                            |                |                |                         |                                                                                                |                          |                |                |                                                                     |                |                             |                   |
| <b>Title:</b> SBIR and STIR<br><br><b>Description:</b> Funding is provided for the following effort.<br><br><b>FY 2012 Accomplishments:</b><br>SBIR and STIR                                        |                |                |                         |                                                                                                |                          |                |                | <b>Articles:</b><br><br>0.062<br>0                                  | 0.000          | 0.000                       |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                   |                |                |                         |                                                                                                |                          |                |                | 2.012                                                               | 3.839          | 2.650                       |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                            |                |                |                         |                                                                                                |                          |                |                |                                                                     |                |                             |                   |
| <b>Line Item</b>                                                                                                                                                                                    | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b>                                                                         | <b>FY 2014<br/>Total</b> | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017</b>                                                      | <b>FY 2018</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • 0603804/K41: <i>RDTE, Logistics and Engineer Equipment - Advanced Development</i>                                                                                                                 | 3.990          | 2.706          | 2.263                   |                                                                                                | 2.263                    | 3.617          | 3.314          | 3.022                                                               | 3.544          | Continuing                  | Continuing        |
| • MA6000: <i>OPA 3, Distribution Systems, Petroleum &amp; Water</i>                                                                                                                                 | 75.457         | 38.385         | 60.612                  |                                                                                                | 60.612                   | 63.364         | 66.259         | 61.996                                                              | 56.038         | Continuing                  | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                      |                |                |                         |                                                                                                |                          |                |                |                                                                     |                |                             |                   |
| <b>D. Acquisition Strategy</b><br>N/A                                                                                                                                                               |                |                |                         |                                                                                                |                          |                |                |                                                                     |                |                             |                   |
| <b>E. Performance Metrics</b><br>Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010. |                |                |                         |                                                                                                |                          |                |                |                                                                     |                |                             |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                             |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L41: <i>Water And Petroleum Distribution - Ed</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                         | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| SBIR/STTR                                                                                                                                                            | TBD                               | TBD:TBD                                   | 0.000                  | 0.062          |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                   | 0.000                   | 0.062             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 0.000                  | 0.062          |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                               | 0.000                   | 0.062             | 0.000                           |
| <b>Remarks</b><br>not applicable                                                                                                                                     |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                                     |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                         | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Water Systems Capability Improvements                                                                                                                                | Various                           | TARDEC:Warren, MI                         | 0.124                  | 0.060          | Feb 2012          | 0.125                                                                                          |                   | -                   |                   | -                  |                   | -                                                                   | 0.000                   | 0.309             | Continuing                      |
| FSSP Improvements                                                                                                                                                    | Various                           | TARDEC:Warren, MI                         | 2.211                  | -              |                   | 0.824                                                                                          |                   | 0.540               | Jan 2014          | -                  |                   | 0.540                                                               | 0.000                   | 3.575             | Continuing                      |
| Water Systems Capability Improvements                                                                                                                                | Various                           | TBD:TBD                                   | 0.101                  | 0.053          | Feb 2012          | 0.025                                                                                          |                   | -                   |                   | -                  |                   | -                                                                   | 0.000                   | 0.179             | Continuing                      |
| Expeditionary Water Packaging System (EWPS)                                                                                                                          | Various                           | TARDEC:Warren, MI                         | 0.150                  | 0.400          | Feb 2012          | 0.424                                                                                          |                   | 0.960               | Oct 2014          | -                  |                   | 0.960                                                               | 0.000                   | 1.934             | Continuing                      |
| 3K Tactical Water Purification System (TWPS)                                                                                                                         | Various                           | NFESC:Pt. Huneme, CA                      | 0.000                  | -              |                   | 0.200                                                                                          |                   | -                   |                   | -                  |                   | -                                                                   | 0.000                   | 0.200             | Continuing                      |
| 3K Tactical Water Purification System (TWPS)                                                                                                                         | MIPR                              | TARDEC:Warren, MI                         | 0.000                  | -              |                   | 0.335                                                                                          |                   | -                   |                   | -                  |                   | -                                                                   | 0.000                   | 0.335             | 0.000                           |
| Modular Tactical Refueling System (MTRS)                                                                                                                             | MIPR                              | TARDEC:Warren, MI                         | 0.000                  | 0.237          | Feb 2012          | 0.200                                                                                          |                   | 0.650               | Jan 2014          | -                  |                   | 0.650                                                               | 0.000                   | 1.087             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 2.586                  | 0.750          |                   | 2.133                                                                                          |                   | 2.150               |                   | 0.000              |                   | 2.150                                                               | 0.000                   | 7.619             |                                 |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army                                                                                  |                              |                                   |                    |         |               |                                                                                     |               |                 |               |                                                       |               | DATE: April 2013 |                     |               |                                |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                              |                                   |                    |         |               | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | PROJECT<br>L41: Water And Petroleum Distribution - Ed |               |                  |                     |               |                                |
| Support (\$ in Millions)                                                                                                                |                              |                                   |                    | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                        |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                                                      | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                | Award<br>Date | Cost            | Award<br>Date | Cost                                                  | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Fuel System Supply Point (FSSP)                                                                                                         | Various                      | TARDEC:Warren, MI                 | 0.122              | -       |               | -                                                                                   |               | 0.500           | Jan 2014      | -                                                     |               | 0.500            | 0.000               | 0.622         | Continuing                     |
| Water Purification Systems Improvements                                                                                                 | Various                      | TARDEC:Warren, MI                 | 0.000              | -       |               | 0.100                                                                               |               | -               |               | -                                                     |               | -                | 0.000               | 0.100         | Continuing                     |
| Subtotal                                                                                                                                |                              |                                   | 0.122              | 0.000   |               | 0.100                                                                               |               | 0.500           |               | 0.000                                                 |               | 0.500            | 0.000               | 0.722         |                                |
| Test and Evaluation (\$ in Millions)                                                                                                    |                              |                                   |                    | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                        |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                                                      | Contract<br>Method<br>& Type | Performing<br>Activity & Location | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                | Award<br>Date | Cost            | Award<br>Date | Cost                                                  | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Fuel System Supply Point (FSSP)                                                                                                         | MIPR                         | Yuma:Yuma Proving Ground, AZ      | 0.000              | 0.650   | Feb 2012      | 0.500                                                                               |               | -               |               | -                                                     |               | -                | 0.000               | 1.150         | Continuing                     |
| Water Systems Capability Improvements                                                                                                   | Various                      | TARDEC:Warren, MI                 | 0.265              | 0.050   | Feb 2012      | -                                                                                   |               | -               |               | -                                                     |               | -                | 0.000               | 0.315         | Continuing                     |
| Water Systems Capability Improvements                                                                                                   | Various                      | NFESC:Port Hueneme, CA            | 0.626              | 0.100   | Feb 2012      | -                                                                                   |               | -               |               | -                                                     |               | -                | 0.000               | 0.726         | Continuing                     |
| Expeditionary Water Packaging System (EWPS)                                                                                             | Various                      | Aberdeen Proving Ground:APG, MD   | 0.630              | 0.200   | Feb 2012      | 0.100                                                                               |               | -               |               | -                                                     |               | -                | 0.000               | 0.930         | Continuing                     |
| Camel II                                                                                                                                | MIPR                         | Yuma Proving Ground:YPG, AZ       | 0.000              | -       |               | 0.506                                                                               |               | -               |               | -                                                     |               | -                | 0.000               | 0.506         | 0.000                          |
| Modular Tactical Refueling System (MTRS)                                                                                                | Various                      | Yuma:Yuma Proving Ground, AZ      | 0.000              | 0.200   | Feb 2012      | 0.500                                                                               |               | -               |               | -                                                     |               | -                | 0.000               | 0.700         | Continuing                     |
| Subtotal                                                                                                                                |                              |                                   | 1.521              | 1.200   |               | 1.606                                                                               |               | 0.000           |               | 0.000                                                 |               | 0.000            | 0.000               | 4.327         |                                |
|                                                                                                                                         |                              |                                   | All Prior<br>Years | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                        |               | FY 2014<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                                                                                                     |                              |                                   | 4.229              | 2.012   |               | 3.839                                                                               |               | 2.650           |               | 0.000                                                 |               | 2.650            | 0.000               | 12.730        |                                |
| Remarks                                                                                                                                 |                              |                                   |                    |         |               |                                                                                     |               |                 |               |                                                       |               |                  |                     |               |                                |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army                                                                                                         |  |  | <b>DATE:</b> April 2013                                                                        |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |
|                                                                                                                                                                      |  |  | <b>PROJECT</b><br>L41: <i>Water And Petroleum Distribution - Ed</i>                            |  |  |

|                                                | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                                | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Fuel System Supply Points (FSSPs) Tank Gauging |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Modular Tactical Refueling System (MTRS)       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| 3K Tactical Water Purifictin System (3K TWPS)  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Water Quality Monitoring                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Unit Water Pod (Camel II)                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Small Unit Water Purifier (SUWP)               |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                                     | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L41: <i>Water And Petroleum Distribution - Ed</i> |                         |

Schedule Details

| Events                                         | Start   |      | End     |      |
|------------------------------------------------|---------|------|---------|------|
|                                                | Quarter | Year | Quarter | Year |
| Fuel System Supply Points (FSSPs) Tank Gauging | 4       | 2013 | 4       | 2014 |
| Modular Tactical Refueling System (MTRS)       | 1       | 2013 | 4       | 2014 |
| 3K Tactical Water Purifictin System (3K TWPS)  | 3       | 2015 | 4       | 2016 |
| Water Quality Monitoring                       | 1       | 2015 | 4       | 2017 |
| Unit Water Pod (Camel II)                      | 2       | 2013 | 3       | 2013 |
| Small Unit Water Purifier (SUWP)               | 4       | 2015 | 4       | 2018 |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|-------------------------------------------------|---------|------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                                  |               |         |         | DATE: April 2013                                |         |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>L43: ENGINEER SUPPORT EQUIPMENT - ED |         |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                         | FY 2018 | Cost To Complete | Total Cost |
| L43: ENGINEER SUPPORT EQUIPMENT - ED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -               | 1.061   | 1.916                | 0.000        | -                                                                                | 0.000         | 0.000   | 0.000   | 0.000                                           | 0.000   | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| Not applicable for this item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| This project supports development, demonstration, testing and evaluation within the Engineering Support Equipment arena for the Hydraulic Electric Pneumatic Petroleum Operated Equipment (HEPPOE), Surveying, Firefighting Individual Requirements Equipment Support (FIRES), Concrete and Masonry, Electricians, Plumbers, Pipefitters, Field Lighting Sets, Diving Equipment, Surface Swimmer Support Sets, Surface Supplied Diving Set, procurement of new Technical/Special Tools, Pioneer Support Set, and the Pioneer Land Clearing and Building Erection Set. Funding will support the procurement of market samples and testing for Hazard ID & Marking, Pioneer Light Field Engineering, Deep Sea Set, Underwater Construction Set, Closed Circuit Scuba Set, the Family of Diving Air Compressors, Diver Propulsion Systems, Vertical Skills Engineer Construction Kit (VSECK), Family of Detainee Processing Evidence Collection Kit, Fire Protection Equipment (FPE) and Assault Boats and Outboard Motors. Efforts will also involve modernization of the Swimmer Support Sets and Individual Swimmer Support Sets as well as existing Sets, Kits, and Outfits (SKOs). Funding will develop Supervisor, Propulsion, Emergency and Recovery Set (SPEaRS), which supports Self Contained Underwater Breathing apparatus (SCUBA) teams conducting underwater reconnaissance, demolition, repair, light salvage and recovery missions to a maximum depth of 130 feet and includes a swift water package (Diver Propulsion System). This program will reduce the logistical footprint by eliminating obsolete equipment and reducing the number of programs. |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                                  |               |         |         | FY 2012                                         | FY 2013 | FY 2014          |            |
| Title: Document Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         | 0.045                                           | 0.050   | 0.000            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |         |                      |              |                                                                                  |               |         |         | 0                                               | 0       |                  |            |
| Description: Development of various capabilities documents and other documents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| FY 2012 Accomplishments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| Coordinate to have ICDs, CDDs, and CPDs written for various programs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |
| FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |         |                      |              |                                                                                  |               |         |         |                                                 |         |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                |  |                                                                                                | <b>DATE:</b> April 2013        |                                                               |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                              |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                                | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                           |  |                                                                                                | <b>FY 2012</b>                 | <b>FY 2013</b>                                                | <b>FY 2014</b> |
| Continue development of ICDs, CDDs, and CPDs for various programs                                                                                                                                                                                                                                                                 |  |                                                                                                |                                |                                                               |                |
| <b>Title:</b> Underwater Construction Sets<br><br><b>Description:</b> Research, Development, and Testing of Underwater Construction Sets<br><br><b>FY 2012 Accomplishments:</b><br>Procurement of Underwater Construction Set test articles<br><br><b>FY 2013 Plans:</b><br>Procure and test Underwater Construction Set articles |  |                                                                                                | <b>Articles:</b><br>0.250<br>0 | 0.350<br>0                                                    | 0.000          |
| <b>Title:</b> Air Compressors for the Diving Program<br><br><b>Description:</b> Air Compressors for the Diving Program<br><br><b>FY 2012 Accomplishments:</b><br>Procurement of air compressor test articles                                                                                                                      |  |                                                                                                | <b>Articles:</b><br>0.175<br>0 | 0.000                                                         | 0.000          |
| <b>Title:</b> Fire Protection Equipment (FPE)<br><br><b>Description:</b> Fire Protection Equipment<br><br><b>FY 2012 Accomplishments:</b><br>Procure FPE items<br><br><b>FY 2013 Plans:</b><br>Procure Type II and Type III FPE items                                                                                             |  |                                                                                                | <b>Articles:</b><br>0.118<br>0 | 0.170<br>0                                                    | 0.000          |
| <b>Title:</b> Deep Sea Set<br><br><b>Description:</b> Development of the Deep Sea Set<br><br><b>FY 2013 Plans:</b><br>Create Computer Model of existing set /add enhancements to model /develop TDP in support of make-or-buy decision                                                                                            |  |                                                                                                | <b>Articles:</b><br>0.000      | 0.221<br>0                                                    | 0.000          |
| <b>Title:</b> Assault Boats and Outboard Motors                                                                                                                                                                                                                                                                                   |  |                                                                                                | 0.160                          | 0.625                                                         | 0.000          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                | <b>DATE:</b> April 2013 |                                                               |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                         | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                | <b>FY 2012</b>          | <b>FY 2013</b>                                                | <b>FY 2014</b> |
| <b>Articles:</b><br><br><b>Description:</b> Development of various Assault Boats and Outboard Motors<br><br><b>FY 2012 Accomplishments:</b><br>Procurement of Assault Boats and Outboard Motors test articles<br><br><b>FY 2013 Plans:</b><br>Testing of 7-man and 15-man boats and testing of motors                                                                                                                                                                                                                                                           |  |                                                                                                | 0<br>0                  | 0<br>0                                                        |                |
| <b>Title:</b> Engineering and Quality Assurance<br><br><b>Description:</b> Engineering and Quality Assurance of engineering SKOs<br><br><b>FY 2012 Accomplishments:</b><br>Engineering and Quality Assurance dedicated to the development and quality of Assault Boats, Outboard Motors, Diving Equipment, and other engineering sets<br><br><b>FY 2013 Plans:</b><br>Engineering and Quality Assurance dedicated to the development and quality of Assault Boats, Outboard Motors, Diving Equipment, Soldier Portable, Firefighting and other engineering sets |  |                                                                                                | 0.156<br>0              | 0.300<br>0                                                    | 0.000          |
| <b>Title:</b> Vertical Skills Engineer Construction Kit (VSECK)<br><br><b>Description:</b> Research, Development, and Testing of Vertical Skills Engineer Construction Kit (VSECK)<br><br><b>FY 2012 Accomplishments:</b><br>Purchase and analysis of VSECK market samples<br><br><b>FY 2013 Plans:</b><br>Procure and test VSECK                                                                                                                                                                                                                               |  |                                                                                                | 0.020<br>0              | 0.125<br>0                                                    | 0.000          |
| <b>Title:</b> Detainee Kit<br><br><b>Description:</b> Research, Development, and Testing of Detainee Kit<br><br><b>FY 2012 Accomplishments:</b>                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                | 0.044<br>0              | 0.075<br>0                                                    | 0.000          |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                 |         |         |                 |                                                                                     |                  |         |         |                                                    | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>L43: ENGINEER SUPPORT EQUIPMENT -<br>ED |                  |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                        |         |         |                 |                                                                                     |                  |         |         |                                                    | FY 2012          | FY 2013             | FY 2014    |
| Purchase and analysis of Detainee Kit market samples                                                                                    |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| FY 2013 Plans:<br>Procure and test Detainee Kits                                                                                        |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| Title: Diver Propulsion System                                                                                                          |         |         |                 |                                                                                     |                  |         |         |                                                    | 0.060            | 0.000               | 0.000      |
| Articles:                                                                                                                               |         |         |                 |                                                                                     |                  |         |         |                                                    | 0                |                     |            |
| Description: Purchase of Diver Propulsion Systems                                                                                       |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| FY 2012 Accomplishments:<br>Purchase Diver Propulsion test articles                                                                     |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| Title: SBIR/STTR                                                                                                                        |         |         |                 |                                                                                     |                  |         |         |                                                    | 0.033            | 0.000               | 0.000      |
| Articles:                                                                                                                               |         |         |                 |                                                                                     |                  |         |         |                                                    | 0                |                     |            |
| Description: Withheld for SBIR/STTR                                                                                                     |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| FY 2012 Accomplishments:<br>SBIR/STTR withhold                                                                                          |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                              |         |         |                 |                                                                                     |                  |         |         |                                                    | 1.061            | 1.916               | 0.000      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                       |         |         |                 |                                                                                     |                  |         |         |                                                    |                  |                     |            |
| Line Item                                                                                                                               | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                            | FY 2018          | Cost To<br>Complete | Total Cost |
| • OPA 3 ML5325: OPA 3<br>ML5325, Items Less than \$5.0M<br>(Engineering Support)                                                        | 12.482  | 14.093  | 5.859           |                                                                                     | 5.859            | 6.359   | 6.209   | 6.359                                              | 6.359            | Continuing          | Continuing |
| • OPA 3 R70110: OPA 3 R70110,<br>Hydraulic Electric Pneumatic<br>Petroleum Operated Equipment<br>(HEPPOE)                               | 28.949  | 5.889   | 13.350          |                                                                                     | 13.350           | 13.350  | 13.350  | 13.350                                             | 9.700            | Continuing          | Continuing |
| • OPA 3 R70120: OPA 3 R70120,<br>Urban Operations, Platoon Set                                                                          | 13.760  | 13.434  | 11.641          |                                                                                     | 11.641           | 11.641  | 11.641  | 11.641                                             | 11.641           | Continuing          | Continuing |
| • OPA 3 R70130: OPA 3 R70130,<br>Urban Operations, Squad Set                                                                            | 11.481  | 12.250  | 13.150          |                                                                                     | 13.150           | 13.139  | 10.199  | 3.709                                              | 2.917            | Continuing          | Continuing |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                        |                |                |                |                |                                                                                                |                |                |                                                               |                | <b>DATE:</b> April 2013 |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                      |                |                |                |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                |                | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                |                         |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                  |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                | <u>FY 2014</u> | <u>FY 2014</u> | <u>FY 2014</u>                                                                                 |                |                |                                                               |                | <u>Cost To</u>          |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                                                                                                                                          | <u>FY 2012</u> | <u>FY 2013</u> | <u>Base</u>    | <u>OCO</u>     | <u>Total</u>                                                                                   | <u>FY 2015</u> | <u>FY 2016</u> | <u>FY 2017</u>                                                | <u>FY 2018</u> | <u>Complete</u>         | <u>Total Cost</u> |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                            |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                            |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |
| Progression of Programs will be developed by the completion of the Initial Capabilities Document, Capability Development Document, Capability Production Document, and Description For Purchase continuing into Low Rate Initial Production. Modernization and Optimization of existing tools and testing of market samples will progress from System Development and Demonstration (SDD) and transition into production. |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                                                                                                                                        |                |                |                |                |                                                                                                |                |                |                                                               |                |                         |                   |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                                          |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                       |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                                          |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                          |                                   |                                                                          |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| SBIR/STTR                                                                                                                                                            | TBD                               | Various:Various                                                          | 0.000                  | 0.033          |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | 0.000                   | 0.033             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                          | 0.000                  | 0.033          |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         | 0.000                   | 0.033             | 0.000                           |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                                                          |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Surface Supplied Diving Set and Deep Sea Set                                                                                                                         | C/FP                              | PM SKOT/ECBC/TBS:(IL, MI, TBS)                                           | 0.296                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Underwater Construction Set market research and purchase of test articles                                                                                            | C/FP                              | PM SKOT/Edgewood Chemical and Biological Center (ECBC)/TBS:(IL, MI, TBS) | 0.143                  | 0.167          | Dec 2011          | 0.250                                                                                          | Dec 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Market Samples of Soldier Portable Sets and Support Equipment                                                                                                        | SS/FP                             | PM SKOT:Harrison, MI                                                     | 0.586                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Assault Boats and Outboard Motors test articles                                                                                                                      | C/FP                              | TBS:TBS                                                                  | 0.000                  | 0.160          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Market Samples for Detainee Kit                                                                                                                                      | C/FP                              | PM SKOT:Harrison, MI                                                     | 0.000                  | 0.044          | Dec 2011          | 0.050                                                                                          | Nov 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Market Samples of Vertical Skills Engineer Construction Kit (VSECK)                                                                                                  | C/FP                              | PM SKOT:Harrison, MI                                                     | 0.000                  | 0.020          | Feb 2012          | 0.100                                                                                          | Dec 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Deep Sea Set Computer Modeling and TDP Development                                                                                                                   | MIPR                              | ECBC:Rock Island, IL                                                     | 0.000                  | -              |                   | 0.221                                                                                          | Oct 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Procure Fire Protection Equipment (Type I, II and III)                                                                                                               | C/FP                              | PM SKOT:Harrison, MI                                                     | 0.000                  | 0.118          | Dec 2011          | 0.170                                                                                          | Dec 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                                                     |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                       |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                                                     |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                                                                     |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                           | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Diver Propulsion System Market Samples                                                                                                                               | C/FP                              | Patriot 3 Maritime:Fredericksburg, VA                                               | 0.000                  | 0.060          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| XLDS                                                                                                                                                                 | SS/FP                             | TBS:TBS                                                                             | 0.000                  | 0.050          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | 0.000                   | 0.050             | 0.000                           |
| Develop Air Compressors for Diving Program                                                                                                                           | C/FP                              | TBS:TBS                                                                             | 0.000                  | 0.175          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                                     | 1.025                  | 0.794          |                   | 0.791                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                                                                     |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                          |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                           | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                   | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Modernization Analyses for modularity of Soldier Portable/Shelter Mounted SKOs                                                                                       | SS/FP                             | Armament Research Development and Engineering Center (ARDEC):Rock Island, IL        | 0.056                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Engineering Support Equipment Configuration Analyses and document development support                                                                                | MIPR                              | Combined Arms Support Command (CASCOM)/ Maneuver Support Center (MANSCEN): (VA, MO) | 0.125                  | 0.045          | Dec 2011          | 0.050                                                                                          | Oct 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Engineering and Quality Assurance of engineering SKOs (Soldier Portable)                                                                                             | MIPR                              | ECBC/ARDEC:Rock Island, IL                                                          | 0.000                  | 0.089          | Dec 2011          | 0.200                                                                                          | Nov 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| Engineering and Quality Assurance (Boats and Motors)                                                                                                                 | MIPR                              | ECBC:Rock Island, IL                                                                | 0.000                  | 0.100          | Dec 2011          | 0.100                                                                                          | Oct 2012          | -                   |                   | -                  |                   | -                                                             | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                                     | 0.181                  | 0.234          |                   | 0.350                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                         |                         |                   |                                 |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army                                                                                                    |  |  |  |  |  |  |                                                                                                |  |  |  |                                                               | <b>DATE:</b> April 2013 |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  |  |  |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |  | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                         |  |  |

  

| <b>Test and Evaluation (\$ in Millions)</b>                |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b> |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b> |                         |                   |                                 |
|------------------------------------------------------------|-----------------------------------|-------------------------------------------|------------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                                  | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Redevelopment and testing of state of the art Deep Sea Set | MIPR                              | PM SKOT/ ECBC:Rock Island, IL             | 0.375                  | -              |                   | -              |                   | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | Continuing                      |
| Underwater Construction Test                               | C/FP                              | Navy/ PM SKOT:FL, MI                      | 0.000                  | -              |                   | 0.100          | Jan 2013          | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | Continuing                      |
| Testing of Boats and Motors                                | MIPR                              | NAVSEA:VA                                 | 0.000                  | -              |                   | 0.625          | Dec 2012          | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | Continuing                      |
| Testing of Soldier Portable Sets                           | MIPR                              | ECBC/ATEC:IL, VA                          | 0.000                  | -              |                   | 0.050          | Jan 2013          | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                            |                                   |                                           | 0.375                  | 0.000          |                   | 0.775          |                   | 0.000               |                   | 0.000              |                   | 0.000                |                         |                   |                                 |

  

|                            | <b>All Prior Years</b> | <b>FY 2012</b> |  | <b>FY 2013</b> |  | <b>FY 2014 Base</b> |  | <b>FY 2014 OCO</b> |  | <b>FY 2014 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|----------------------------|------------------------|----------------|--|----------------|--|---------------------|--|--------------------|--|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Project Cost Totals</b> | 1.581                  | 1.061          |  | 1.916          |  | 0.000               |  | 0.000              |  | 0.000                |                         |                   |                                 |

  

**Remarks**

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army                                                                                                         |  |                                                                                                | <b>DATE:</b> April 2013                                       |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |

|                                                                                 | FY 2012    |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|---------------------------------------------------------------------------------|------------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                                                                 | 1          | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Procurement of test articles and testing of Assault Boats & Outboard Motors     | [REDACTED] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Procurement of test articles & testing of Soldier Portable Sets & Support Equip | [REDACTED] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                               | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L43: <i>ENGINEER SUPPORT EQUIPMENT - ED</i> |                         |

Schedule Details

| Events                                                                          | Start   |      | End     |      |
|---------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                                 | Quarter | Year | Quarter | Year |
| Procurement of test articles and testing of Assault Boats & Outboard Motors     | 2       | 2012 | 4       | 2014 |
| Procurement of test articles & testing of Soldier Portable Sets & Support Equip | 2       | 2013 | 4       | 2014 |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|----------------------|--------------|----------------------------------------------------------------------------------|---------------|---------|---------|-----------------------------------------------|------------------|------------------|------------|--|--|--|--|--|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              |                                                                                  |               |         |         |                                               | DATE: April 2013 |                  |            |  |  |  |  |  |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>L46: Maintenance Support Equipment |                  |                  |            |  |  |  |  |  |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                       | FY 2018          | Cost To Complete | Total Cost |  |  |  |  |  |
| L46: Maintenance Support Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -               | 3.064   | 3.697                | 1.232        | -                                                                                | 1.232         | 2.045   | 1.976   | 1.829                                         | 1.903            | Continuing       | Continuing |  |  |  |  |  |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| Note<br>Not applicable for this item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| A. Mission Description and Budget Item Justification<br>This project supports requirements generation for Sets, Kits, and Outfits (SKOs) and the subsequent creation of technical data as well as purchase descriptions. Funding will support the modernization of Mobile Maintenance Equipment Shop Set Shelters for the next generation armored vehicle in order to lower the weight of enclosure to accommodate required tool load. Efforts will continue on deploying SKOs to support rapid emerging missions including joint efforts. Support equipment items including Special Tool Sets and Load Banks will be acquired and tested. This project will fund efforts to include development of the Next Generation Shop Equipment Welding (SEW), additional modules and the Next Generation Standard Automotive Tool Set (SATS), the Metalworking and Machining Shop Set (MWMSS), as well as the Armament Repair Shop Set (ARSS) that support the merging of Military Occupational Specialties (MOS). Research, development, and testing of Fire Suppression bottle refill systems and investigation feasibility of Joint Modular Container Systems for SKOs will also be performed. |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |         |                      |              |                                                                                  |               |         |         | FY 2012                                       | FY 2013          | FY 2014          |            |  |  |  |  |  |
| Title: Develop the Next Generation Shop Equipment Welding (SEW)<br><br>Articles:<br><br>Description: Design, Build, and Test the Next Generation SEW, incorporating new technology and a new platform<br><br>FY 2013 Plans:<br>Concept design and development of the Next Generation SEW on a new platform                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                                  |               |         |         | 0.000                                         | 0.900<br>0       | 0.000            |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
| Title: Develop Next Generation Standard Automotive Tool Set (SATS)<br><br>Articles:<br><br>Description: Design, Develop, Build, and Test SATS Future Field Modules<br><br>FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |         |                      |              |                                                                                  |               |         |         | 0.000                                         | 0.403<br>0       | 0.485            |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                               |                  |                  |            |  |  |  |  |  |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     | DATE: April 2013                              |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L46: Maintenance Support Equipment |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     | FY 2012                                       | FY 2013    | FY 2014 |
| Develop Next Generation SATS prototypes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |                                               |            |         |
| FY 2014 Plans:<br>Procure Next Generation SATS prototypes, SATS future field modules and special tools.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |                                               |            |         |
| Title: Metalworking & Machining Shop Set (MWMSS)<br><br>Description: Design, Develop, Build, and Test Metalworking & Machining Shop Set (MWMSS) configurations<br><br>FY 2012 Accomplishments:<br>Additional Testing of MWMSS<br><br>FY 2013 Plans:<br>Additional Testing/Re-testing MWMSS                                                                                                                                                                                                                                                                                                                                                  |                                                                                     | Articles:<br><br>0.175<br>0                   | 0.100<br>0 | 0.000   |
| Title: Mobile Maintenance Equipment Shop Set<br><br>Description: Modernization / Redesign efforts of mobile shelters for next generation of vehicles<br><br>FY 2012 Accomplishments:<br>Purchase of a next generation vehicle chassis, and integration and testing of the next generation vehicle platform variant<br><br>FY 2013 Plans:<br>Vehicular SKO Modernization to include SECM<br><br>FY 2014 Plans:<br>Modernization and development efforts of truck/trailer transported shelters for next generation of vehicles, to include the Shop Equipment Contact Maintenance (SECM) tool load and other vehicle-mounted maintenance SKOs |                                                                                     | Articles:<br><br>0.300<br>0                   | 0.389<br>0 | 0.522   |
| Title: Support for Requirements Generation<br><br>Description: Support for requirements generation of future SKOs<br><br>FY 2012 Accomplishments:<br>Document development support for future requirements<br><br>FY 2013 Plans:                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     | Articles:<br><br>0.122<br>0                   | 0.125<br>0 | 0.125   |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     | DATE: April 2013                              |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                            | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L46: Maintenance Support Equipment |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     | FY 2012                                       | FY 2013    | FY 2014 |
| Document development supporting future requirements SKOs                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                               |            |         |
| FY 2014 Plans:<br>Document development supporting future requirements SKOs                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |                                               |            |         |
| Title: Rapid Deployment SKOs<br><br>Articles:<br><br>Description: Develop Rapid Deployment Sets, Kits, and Outfits (SKOs) - Special Tool Initiative and support to Mine Resistance Ambush Protection (MRAP) and other vehicles<br><br>FY 2013 Plans:<br>Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms.<br>FY 2014 Plans:<br>Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms. |                                                                                     | 0.000                                         | 0.275<br>0 | 0.050   |
| Title: Engineering and Quality Assurance<br><br>Articles:<br><br>Description: Engineering and Quality Assurance in support of SKOs<br><br>FY 2012 Accomplishments:<br>Engineering and Quality Assurance of the Armament Shop Set (ARSS), Special Tool Sets, and other maintenance SKOs<br>FY 2013 Plans:<br>Engineering and Quality Assurance dedicated to the development and quality of maintenance SKOs                                                                                                                         |                                                                                     | 0.306<br>0                                    | 0.450<br>0 | 0.000   |
| Title: Armament Shop Set (ARSS)<br><br>Articles:<br><br>Description: Armament Shop Set upgrades<br><br>FY 2012 Accomplishments:<br>Purchase of ARSS prototypes<br>FY 2013 Plans:<br>Test of ARSS prototypes and development of Technical Manuals                                                                                                                                                                                                                                                                                   |                                                                                     | 2.065<br>0                                    | 1.055<br>0 | 0.000   |
| Title: Acquisition of Support Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     | 0.000                                         | 0.000      | 0.050   |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                 |         |         |                 |                |                                                                                     |         |         |         |         | DATE: April 2013                              |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |         |         |                 |                | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |         |         |         |         | PROJECT<br>L46: Maintenance Support Equipment |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                        |         |         |                 |                |                                                                                     |         |         |         |         | FY 2012                                       | FY 2013    | FY 2014 |
| Description: Support Equipment                                                                                                          |         |         |                 |                |                                                                                     |         |         |         |         |                                               |            |         |
| FY 2014 Plans:<br>Procure and test Support Equipment (standalone lathes, mills, load banks, etc.) formerly known as nonstandard         |         |         |                 |                |                                                                                     |         |         |         |         |                                               |            |         |
| Title: SBIR/STTR<br><br>Description: Withheld for SBIR/STTR<br><br>FY 2012 Accomplishments:<br>SBIR/STTR withhold                       |         |         |                 |                |                                                                                     |         |         |         |         | Articles:<br><br>0.096<br>0                   | 0.000      | 0.000   |
| Accomplishments/Planned Programs Subtotals                                                                                              |         |         |                 |                |                                                                                     |         |         |         |         | 3.064                                         | 3.697      | 1.232   |
| C. Other Program Funding Summary (\$ in Millions)                                                                                       |         |         |                 |                |                                                                                     |         |         |         |         |                                               |            |         |
| Line Item                                                                                                                               | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO | FY 2014<br>Total                                                                    | FY 2015 | FY 2016 | FY 2017 | FY 2018 | Cost To<br>Complete                           | Total Cost |         |
| • OPA 3 M61500: OPA 3 M61500, Shop Equipment, Contact Maintenance (SECM)                                                                | 20.428  |         |                 |                |                                                                                     |         |         |         |         | Continuing                                    | Continuing |         |
| • OPA 3 MA9650: OPA 3 MA9650, Standard Automotive Tool Set (SATS)                                                                       | 8.377   |         |                 |                |                                                                                     |         |         |         |         | Continuing                                    | Continuing |         |
| • OPA 3 G32101: OPA 3 G32101, Items Less Than \$5.0M (MAINTENANCE EQUIPMENT)                                                            | 3.852   | 0.030   | 3.860           |                | 3.860                                                                               | 3.861   | 3.858   | 3.859   | 3.859   | Continuing                                    | Continuing |         |
| • OPA 3 G05302: OPA 3 G05302, Forward Repair System (FRS)                                                                               | 8.376   |         |                 |                |                                                                                     |         |         |         |         | 0.000                                         | 8.376      |         |
| • OPA 3 G39200: OPA 3 G39200, Hydraulic Systems Test and Repair Unit (HSTRU)                                                            | 4.520   | 2.923   | 0.400           |                | 0.400                                                                               |         |         |         |         | Continuing                                    | Continuing |         |
| • OPA 3 G05315: OPA 3 G05315, Metalworking and Machining Shop Set (MWMSS)                                                               |         |         | 15.000          |                | 15.000                                                                              | 15.237  | 17.200  | 15.231  | 15.231  | Continuing                                    | Continuing |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       | <b>DATE:</b> April 2013 |                          |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                              |                       |                       |                       |                       | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                       |                       | <b>PROJECT</b><br>L46: <i>Maintenance Support Equipment</i> |                       |                         |                          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                          |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |
|                                                                                                                                                                                                                                                                                                   |                       |                       | <u><b>FY 2014</b></u> | <u><b>FY 2014</b></u> | <u><b>FY 2014</b></u>                                                                          |                       |                       |                                                             |                       | <u><b>Cost To</b></u>   |                          |
| <u><b>Line Item</b></u>                                                                                                                                                                                                                                                                           | <u><b>FY 2012</b></u> | <u><b>FY 2013</b></u> | <u><b>Base</b></u>    | <u><b>OCO</b></u>     | <u><b>Total</b></u>                                                                            | <u><b>FY 2015</b></u> | <u><b>FY 2016</b></u> | <u><b>FY 2017</b></u>                                       | <u><b>FY 2018</b></u> | <u><b>Complete</b></u>  | <u><b>Total Cost</b></u> |
| • OPA 3 G05330: <i>OPA 3 G05330, Armament Repair Shop Set</i>                                                                                                                                                                                                                                     |                       |                       | 4.027                 |                       | 4.027                                                                                          | 12.420                | 12.420                | 14.420                                                      | 12.400                | Continuing              | Continuing               |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                    |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                    |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |
| Programs will progress from requirements generation through market research, development, market samples and testing. Efforts will support two level maintenance concept utilizing commercial technologies and incorporating them into SKO to support next generation weapon and support systems. |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                     |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                |                       |                       |                       |                       |                                                                                                |                       |                       |                                                             |                       |                         |                          |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                                                                         |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                     |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                                                                         |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L46: <i>Maintenance Support Equipment</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                          |                                   |                                                                                                         |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                                               | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                 | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| SBIR/STTR                                                                                                                                                            | TBD                               | Various:Various                                                                                         | 0.000                  | 0.096          |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                           | 0.000                   | 0.096             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                                                         | 0.000                  | 0.096          |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                       | 0.000                   | 0.096             | 0.000                           |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                                                                                         |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                                               | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                 | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Maintenance Support Equipment Life Cycle Configuration Analyses and ICD Development Support                                                                          | MIPR                              | PM SKOT/ Army Test & Evaluation Command (ATEC)/ Combined Arms Support Command (CASCOM):(IL, MI, MD, VA) | 1.431                  | -              |                   | -                                                                                              |                   | 0.125               | Oct 2013          | -                  |                   | 0.125                                                       | Continuing              | Continuing        | Continuing                      |
| Next Generation Shop Equipment Welding (SEW) concept design and development                                                                                          | MIPR                              | ECBC:Rock Island, IL                                                                                    | 0.000                  | -              |                   | 0.900                                                                                          | Nov 2012          | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| Modernization/Redesign efforts of Truck/Trailer transported shelters for next generation vehicles                                                                    | MIPR                              | ECBC:Rock Island, IL                                                                                    | 0.000                  | 0.300          | Dec 2011          | 0.389                                                                                          | Dec 2012          | 0.522               | Dec 2013          | -                  |                   | 0.522                                                       | Continuing              | Continuing        | Continuing                      |
| Expedited Modernization Initiative Procedure (EMIP) Procurement of new Technical Tools                                                                               | SS/FP                             | Multiple CONUS: (GA, CA, IL, WI, MI)                                                                    | 0.012                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| Develop Rapid Deployment Sets, Kits, & Outfits - Special Tool Initiative.                                                                                            | MIPR                              | ECBC:Rock Island, IL                                                                                    | 0.100                  | -              |                   | 0.150                                                                                          | Oct 2012          | 0.050               | Dec 2013          | -                  |                   | 0.050                                                       | Continuing              | Continuing        | Continuing                      |
| Procure Special Tools in support of Ground Combat System                                                                                                             | MIPR                              | PM SKOT:Harrison, MI                                                                                    | 0.000                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                                               |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                     |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                                               |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L46: <i>Maintenance Support Equipment</i> |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                          |                                   |                                                                               |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                     | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                 | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Armament Repair Shop Set (ARSS) market research and prototypes                                                                                                       | MIPR                              | ECBC-PIF:Edgewood, MD                                                         | 0.050                  | 1.969          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                               | 1.593                  | 2.269          |                   | 1.439                                                                                          |                   | 0.697               |                   | 0.000              |                   | 0.697                                                       |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                                                               |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                     | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                 | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Life Cycle Configuration Analyses & Support to Initial Capabilities Document Development                                                                             | MIPR                              | PM SKOT Rock Island/ CASCOM / Maneuver Support Center (MANSCEN): (IL, VA, MO) | 0.496                  | 0.122          | Feb 2012          | 0.125                                                                                          | Dec 2012          | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| Modernization of Tool Loads based on Field Feedback                                                                                                                  | MIPR                              | PM SKOT:Harrison, MI                                                          | 0.300                  | -              |                   | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| Engineer and Quality Assurance in support of SKOs                                                                                                                    | MIPR                              | ECBC / ARDEC / PM SKOT:(IL, MI)                                               | 0.578                  | 0.402          | Dec 2011          | 0.450                                                                                          | Nov 2012          | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                               | 1.374                  | 0.524          |                   | 0.575                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                       |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                                                               |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                        |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                     | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                 | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Test Special Tool Kits                                                                                                                                               | MIPR                              | ECBC / ATEC:(IL, MD)                                                          | 0.000                  | -              |                   | 0.125                                                                                          |                   | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |
| Testing of the Metalworking & Machining Shop Set (MWMSS)                                                                                                             | MIPR                              | ATEC:Aberdeen, MD                                                             | 2.446                  | 0.175          | Dec 2011          | 0.100                                                                                          | Dec 2012          | -                   |                   | -                  |                   | -                                                           | Continuing              | Continuing        | Continuing                      |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army                                                                                                    |                                   |                                           |                        |                |                   |                |                                                                                                |                     |                   |                    |                                                             |                      | <b>DATE:</b> April 2013 |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                           |                        |                |                   |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                     |                   |                    | <b>PROJECT</b><br>L46: <i>Maintenance Support Equipment</i> |                      |                         |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b> |                                                                                                | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                                                             | <b>FY 2014 Total</b> |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b>                                                                              | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b>                                           | <b>Cost</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Test Armament Repair Shop Set (ARSS)                                                                                                                                 | MIPR                              | ATEC:Aberdeen, MD                         | 0.000                  | -              |                   | 1.055          | Dec 2012                                                                                       | -                   |                   | -                  |                                                             | -                    | Continuing              | Continuing        | Continuing                      |
| Further develop SATS Field Maintenance Module & viability of adding Load Handling System capability                                                                  | MIPR                              | PM SKOT:Harrison, MI                      | 0.263                  | -              |                   | 0.403          | Nov 2012                                                                                       | 0.485               | Nov 2013          | -                  |                                                             | 0.485                | Continuing              | Continuing        | Continuing                      |
| Procure and Test standalone support equipment items                                                                                                                  | MIPR                              | ATEC:Aberdeen, MD                         | 0.000                  | -              |                   | -              |                                                                                                | 0.050               | Dec 2013          | -                  |                                                             | 0.050                | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 2.709                  | 0.175          |                   | 1.683          |                                                                                                | 0.535               |                   | 0.000              |                                                             | 0.535                |                         |                   |                                 |
|                                                                                                                                                                      |                                   |                                           | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b> |                                                                                                | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                                                             | <b>FY 2014 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                           | 5.676                  | 3.064          |                   | 3.697          |                                                                                                | 1.232               |                   | 0.000              |                                                             | 1.232                |                         |                   |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                           |                        |                |                   |                |                                                                                                |                     |                   |                    |                                                             |                      |                         |                   |                                 |

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|--------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|------------------------------------|--|--|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army                                                      |  |  |  |  |  |  |  |  |  |  |  |                                                            |  |  |  |  |  |  |  |  |  |  |  | DATE: April 2013                   |  |  |  |
| APPROPRIATION/BUDGET ACTIVITY                                                                          |  |  |  |  |  |  |  |  |  |  |  | R-1 ITEM NOMENCLATURE                                      |  |  |  |  |  |  |  |  |  |  |  | PROJECT                            |  |  |  |
| 2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |  |  |  |  |  |  |  |  |  |  |  | PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |  |  |  |  |  |  |  |  |  |  |  | L46: Maintenance Support Equipment |  |  |  |
|                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |                                                            |  |  |  |  |  |  |  |  |  |  |  |                                    |  |  |  |
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| Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army                                                                                      |                                                                                     | DATE: April 2013                              |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>L46: Maintenance Support Equipment |

Schedule Details

| Events                                                                           | Start   |      | End     |      |
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|                                                                                  | Quarter | Year | Quarter | Year |
| Joint Modular Intermodal Containerizing of Soldier Portable & Special Tools Sets | 1       | 2014 | 4       | 2017 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                                  |               |         |         |                                                         | DATE: April 2013 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |               |         |         | PROJECT<br>L47: Improved Environmental Control Units Ed |                  |                  |            |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | All Prior Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014 Base | FY 2014 OCO <sup>##</sup>                                                        | FY 2014 Total | FY 2015 | FY 2016 | FY 2017                                                 | FY 2018          | Cost To Complete | Total Cost |
| L47: Improved Environmental Control Units Ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -               | 0.000   | 2.976                | 2.968        | -                                                                                | 2.968         | 0.000   | 0.000   | 0.000                                                   | 0.000            | Continuing       | Continuing |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| <b>Note</b><br>Not applicable for this item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| <b>A. Mission Description and Budget Item Justification</b><br>The Improved Environmental Control Units (IECU) program will provide a new generation of ECUs that use environmentally approved refrigerants, with zero ozone-depleting chemicals (ODCs) to replace the current Military Standard (MIL-STD) Family of Environmental Control Units (ECUs). The IECUs will provide improved cooling, heating, and dehumidification to soldiers and materiel systems in combat, combat support and combat service support units. The IECUs are required to replace currently fielded environmental control units in order to comply with statutory and regulatory restrictions on the use of Class II ODCs and to improve the performance of military ECUs. They are form, fit and function replacements to the current MIL-STD ECUs. Technical improvements over existing military-standard ECUs will yield significant fuel and weight savings, reduction in scheduled maintenance, and increased reliability. 9, 18, and 36K BTU/H IECUs: The 9, 18 and 36K BTU/H IECUs will be a replacement for the current MIL-STD-ECU variants. The new family of IECUs will utilize a new refrigerant which complies with mandated EPA (Environmental Protection Agency) requirements (non-global warming). FY13 and FY14 funds Engineering and Manufacturing Development (EMD) Phase activities for the 9, 18 and 36K development, as well as further IECU variants which include multiple trailer-mounted systems and 18K vertical configurations (current family under development does not have a vertical 18; additional users have been identified as requiring this configuration). In addition, the field has identified an emerging requirement for an integrated fuel-fired heating/cooling system. These further variants will further standardize cooling units in the field, enable cooling of larger shelters and structures, offer increased mobility, and may be used to cool multiple tents with one unit. |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |         |                      |              |                                                                                  |               |         |         | <b>FY 2012</b>                                          | <b>FY 2013</b>   | <b>FY 2014</b>   |            |
| <b>Title:</b> Technology Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |         |                      |              |                                                                                  |               |         |         | 0.000                                                   | 2.000            | 0.524            |            |
| <b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |         |                      |              |                                                                                  |               |         |         |                                                         | 0                |                  |            |
| <b>Description:</b> Engineering and Manufacturing Development (EMD) for 9/18/36K BTUH IECU, multiple trailer-mounted variants, 18K Vertical configuration and integrated heating/cooling systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |
| <b>FY 2013 Plans:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |         |                      |              |                                                                                  |               |         |         |                                                         |                  |                  |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                | <b>DATE:</b> April 2013       |                                                                       |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                               | <b>PROJECT</b><br>L47: <i>Improved Environmental Control Units Ed</i> |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                | <b>FY 2012</b>                | <b>FY 2013</b>                                                        | <b>FY 2014</b> |
| Support continuing EMD effort for 9/18/36K BTUH IECU. Complete final engineering requirements for 9/18/36K IECUs. Develop prototypes for multiple trailer-mounted variants, 18K Vertical configuration and integrated heating/cooling units to meet emerging user needs.<br><br><b>FY 2014 Plans:</b><br>Support continuing EMD effort for 9/18/36K BTUH IECU. Complete final engineering requirements for 9/18/36K IECUs. Develop prototypes for multiple trailer-mounted variants, 18K Vertical configuration and integrated heating/cooling units to meet emerging user needs.                                                                                                                                                                                                                       |  |                                                                                                |                               |                                                                       |                |
| <b>Title:</b> Government System Test and Evaluation<br><br><b>Description:</b> Testing for prototype performance for the trailer mounted variants of the IECUs.<br><br><b>FY 2013 Plans:</b><br>Testing for prototype performance for the trailer mounted variants of the IECUs.<br><br><b>FY 2014 Plans:</b><br>Conduct reliability testing, Limited User Test, and logistics verification for 18K Vertical IECU, as well as trailer mounted variants. Conduct performance tests on integrated heating/cooling units.                                                                                                                                                                                                                                                                                  |  |                                                                                                | <b>Articles:</b><br><br>0.000 | 0.199<br>0                                                            | 1.500          |
| <b>Title:</b> Other Contract and Government Agency<br><br><b>Description:</b> Support engineering, logistics, and testing efforts for multiple trailer-mounted variants, as well as 18 K Vertical configuration and integrated heating/cooling units. Support EMD effort on 9/18/36K IECU family.<br><br><b>FY 2013 Plans:</b><br>Support engineering, logistics, and testing efforts for multiple trailer-mounted variants, as well as 18K Vertical configuration and integrated heating/cooling units. Support EMD effort on 9/18/36K IECU family.<br><br><b>FY 2014 Plans:</b><br>Support engineering, logistics, and testing efforts for multiple trailer-mounted variants, as well as 18K Vertical configuration and integrated heating/cooling units. Support EMD effort on 9/18/36K IECU family. |  |                                                                                                | <b>Articles:</b><br><br>0.000 | 0.344<br>0                                                            | 0.444          |
| <b>Title:</b> Government Program Management<br><br><b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                | 0.000                         | 0.433<br>0                                                            | 0.500          |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------------------|------------------------------------------------------------------------------------------------|--------------------------------|----------------|-----------------------------------------------------------------------|----------------|----------------|-----------------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |                               |                                                                                                |                                |                | <b>DATE:</b> April 2013                                               |                |                |                                   |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                |                               | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                                |                | <b>PROJECT</b><br>L47: <i>Improved Environmental Control Units Ed</i> |                |                |                                   |                   |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                |                               |                                                                                                |                                |                | <b>FY 2012</b>                                                        | <b>FY 2013</b> | <b>FY 2014</b> |                                   |                   |
| <b>Description:</b> Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36 IECU family, multiple trailer-mounted variants, as well as 18K Vertical configurations. Transition to production. Provide oversight and management of integrated heating/cooling units.<br><br><b>FY 2013 Plans:</b><br>Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36K IECU family, multiple trailer-mounted variants, as well as 18K Vertical configurations. Transition to production. Provide oversight and management of integrated heating/cooling units.<br><br><b>FY 2014 Plans:</b><br>Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36 IECU family, multiple trailer-mounted variants, as well as 18K Vertical configurations. Transition to production. Provide oversight and management of integrated heating/cooling units. |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |                               |                                                                                                |                                |                | 0.000                                                                 | 2.976          | 2.968          |                                   |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| <u>Line Item</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u><br><u>Base</u> | <u>FY 2014</u><br><u>OCO</u>                                                                   | <u>FY 2014</u><br><u>Total</u> | <u>FY 2015</u> | <u>FY 2016</u>                                                        | <u>FY 2017</u> | <u>FY 2018</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
| • MF9303: <i>OPA 3, Improved Environmental Control Units , MF9303</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.109         | 10.689         | 7.269                         |                                                                                                | 7.269                          | 22.351         | 24.321                                                                | 25.671         |                | Continuing                        | Continuing        |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| <b>D. Acquisition Strategy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| Complete Engineering and Manufacturing Development (EMD) for the 9/18/36K IECU variants and transition to production. Begin EMD for level efforts in support of multiple trailer-mounted IECU variants as well as a vertical configuration of the 18K IECU. The initial prototypes of the trailer-mounted variants will be assembled in house, with eventual production via depot-level integration of GFE from existing production contracts. The 18K vertical EMD prototype effort will be acquired in a single-contract, single-contractor award, via a CPFF 2 year EMD contract. A follow-on production contract will be planned for later acquisition. Initial prototypes of the integrated fuel-fired heating and cooling systems will be procured off-the-shelf through third party vendors for assessment. This assessment will support development of a PD for eventual competitive procurement.                                                 |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| <b>E. Performance Metrics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |
| Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                |                               |                                                                                                |                                |                |                                                                       |                |                |                                   |                   |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army                                                                                  |                              |                                              |                    |         |               |                                                                                     |               |                 |               |                                                            |               | DATE: April 2013 |                     |               |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------|--------------------|---------|---------------|-------------------------------------------------------------------------------------|---------------|-----------------|---------------|------------------------------------------------------------|---------------|------------------|---------------------|---------------|--------------------------------|
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                              |                                              |                    |         |               | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | PROJECT<br>L47: Improved Environmental Control Units<br>Ed |               |                  |                     |               |                                |
| Management Services (\$ in Millions)                                                                                                    |                              |                                              |                    | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                             |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                                                      | Contract<br>Method<br>& Type | Performing<br>Activity & Location            | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                | Award<br>Date | Cost            | Award<br>Date | Cost                                                       | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 9,18 and 36K IECU                                                                                                                       | Various                      | PM-MEP:various                               | 1.124              | -       |               | -                                                                                   |               | 0.050           | Nov 2013      | -                                                          |               | 0.050            | 0.000               | 1.174         | Continuing                     |
| Trailer Variants                                                                                                                        | Various                      | PM-MEP:various                               | 0.000              | -       |               | 0.433                                                                               | Nov 2012      | 0.075           | Nov 2013      | -                                                          |               | 0.075            | 0.000               | 0.508         | Continuing                     |
| 18K Vertical                                                                                                                            | Various                      | PM-MEP:various                               | 0.000              | -       |               | -                                                                                   |               | 0.050           | Nov 2013      | -                                                          |               | 0.050            | 0.000               | 0.050         | 0.000                          |
| Integrated heating/cooling<br>units                                                                                                     | Various                      | PM-MEP:various                               | 0.000              | -       |               | -                                                                                   |               | 0.025           | Nov 2013      | -                                                          |               | 0.025            | 0.000               | 0.025         | 0.000                          |
| SBIR/STTR                                                                                                                               | Various                      | various:various                              | 0.137              | -       |               | -                                                                                   |               | -               |               | -                                                          |               | -                | 0.000               | 0.137         | 0.000                          |
| Subtotal                                                                                                                                |                              |                                              | 1.261              | 0.000   |               | 0.433                                                                               |               | 0.200           |               | 0.000                                                      |               | 0.200            | 0.000               | 1.894         |                                |
| Product Development (\$ in Millions)                                                                                                    |                              |                                              |                    | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                             |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                                                      | Contract<br>Method<br>& Type | Performing<br>Activity & Location            | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                | Award<br>Date | Cost            | Award<br>Date | Cost                                                       | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 9 ,18 and 36K IECU                                                                                                                      | C/CPFF                       | Mainstream<br>Engineering:Vero<br>Beach, FL  | 2.064              | -       |               | -                                                                                   |               | -               |               | -                                                          |               | -                | 0.000               | 2.064         | Continuing                     |
| Trailer Mounted variants                                                                                                                | MIPR                         | CERDEC Night<br>Vision Lab:Ft Belvoir,<br>VA | 0.000              | -       |               | -                                                                                   |               | 0.400           | Mar 2014      | -                                                          |               | 0.400            | 0.000               | 0.400         | 0.000                          |
| 18K Vertical                                                                                                                            | C/CPFF                       | TBD:TBD                                      | 0.000              | -       |               | 2.000                                                                               | Jun 2013      | 0.600           | Mar 2014      | -                                                          |               | 0.600            | 0.000               | 2.600         | 0.000                          |
| Subtotal                                                                                                                                |                              |                                              | 2.064              | 0.000   |               | 2.000                                                                               |               | 1.000           |               | 0.000                                                      |               | 1.000            | 0.000               | 5.064         |                                |
| Support (\$ in Millions)                                                                                                                |                              |                                              |                    | FY 2012 |               | FY 2013                                                                             |               | FY 2014<br>Base |               | FY 2014<br>OCO                                             |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                                                      | Contract<br>Method<br>& Type | Performing<br>Activity & Location            | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                                                | Award<br>Date | Cost            | Award<br>Date | Cost                                                       | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| 9, 18 and 36K IECU                                                                                                                      | MIPR                         | CERDEC:Fort<br>Belvoir, VA                   | 1.642              | -       |               | -                                                                                   |               | 0.500           | Mar 2014      | -                                                          |               | 0.500            | 0.000               | 2.142         | 0.000                          |
| 18K Vertical                                                                                                                            | Various                      | CERDEC:Fort<br>Belvoir, VA                   | 3.507              | -       |               | -                                                                                   |               | 0.200           | Mar 2014      | -                                                          |               | 0.200            | 0.000               | 3.707         | 0.000                          |
| Trailer variants                                                                                                                        | MIPR                         | CERDEC:Fort<br>Belvoir, VA                   | 0.000              | -       |               | 0.344                                                                               | Oct 2012      | 0.300           | Nov 2013      | -                                                          |               | 0.300            | 0.000               | 0.644         | 0.000                          |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------|------------------------|----------------|-------------------|----------------|------------------------------------------------------------------------------------------------|---------------------|-------------------|--------------------|-------------------|-----------------------------------------------------------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2014 Army                                                                                                    |                                   |                                           |                        |                |                   |                |                                                                                                |                     |                   |                    |                   |                                                                       | <b>DATE:</b> April 2013 |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                           |                        |                |                   |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                     |                   |                    |                   | <b>PROJECT</b><br>L47: <i>Improved Environmental Control Units Ed</i> |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b> |                                                                                                | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b>                                                                              | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Integrated heating/cooling units                                                                                                                                     | MIPR                              | CERDEC:Fort Belvoir, VA                   | 0.000                  | -              |                   | -              |                                                                                                | 0.090               | Mar 2014          | -                  |                   | 0.090                                                                 | 0.000                   | 0.090             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 5.149                  | 0.000          |                   | 0.344          |                                                                                                | 1.090               |                   | 0.000              |                   | 1.090                                                                 | 0.000                   | 6.583             | 0.000                           |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                                          |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b> |                                                                                                | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b>                                                                              | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| 9,18 and 36K IECU                                                                                                                                                    | MIPR                              | ATEC:APG, MD                              | 0.300                  | -              |                   | -              |                                                                                                | 0.278               | Mar 2014          | -                  |                   | 0.278                                                                 | 0.000                   | 0.578             | 0.000                           |
| Trailer Variants                                                                                                                                                     | MIPR                              | ATEC:APG, MD                              | 0.000                  | -              |                   | 0.199          | Nov 2012                                                                                       | 0.150               | Mar 2014          | -                  |                   | 0.150                                                                 | 0.000                   | 0.349             | Continuing                      |
| 18K Vertical                                                                                                                                                         | MIPR                              | ATEC:APG, MD                              | 0.000                  | -              |                   | -              |                                                                                                | 0.200               | Mar 2014          | -                  |                   | 0.200                                                                 | 0.000                   | 0.200             | 0.000                           |
| Integrated heating/cooling units                                                                                                                                     | MIPR                              | ATEC:APG, MD                              | 0.000                  | -              |                   | -              |                                                                                                | 0.050               |                   | -                  |                   | 0.050                                                                 | 0.000                   | 0.050             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                           | 0.300                  | 0.000          |                   | 0.199          |                                                                                                | 0.678               |                   | 0.000              |                   | 0.678                                                                 | 0.000                   | 1.177             |                                 |
| <b>Project Cost Totals</b>                                                                                                                                           |                                   |                                           | 8.774                  | 0.000          |                   | 2.976          |                                                                                                | 2.968               |                   | 0.000              |                   | 2.968                                                                 | 0.000                   | 14.718            |                                 |
| <b>Remarks</b>                                                                                                                                                       |                                   |                                           |                        |                |                   |                |                                                                                                |                     |                   |                    |                   |                                                                       |                         |                   |                                 |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2014 Army</b>    |  |  | <b>DATE:</b> April 2013                          |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b>                            |  |  | <b>R-1 ITEM NOMENCLATURE</b>                     |  |  |
| 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> |  |  | PE 0604804A: <i>Logistics and Engineer</i>       |  |  |
| BA 5: <i>System Development &amp; Demonstration (SDD)</i>       |  |  | Equipment - Eng Dev                              |  |  |
|                                                                 |  |  | <b>PROJECT</b>                                   |  |  |
|                                                                 |  |  | L47: <i>Improved Environmental Control Units</i> |  |  |
|                                                                 |  |  | Ed                                               |  |  |

|                                  | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|----------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                  | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Production Qualification Test    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct User Evaluation          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Logistics Demonstration          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Milestone C/LRIP Decision        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| LRIP/TC Std/FMR Work             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Full Rate Production Decision    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Trailer Variants IECU            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Preliminary Design Review        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Design and Fabrication           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| CDR Trailers                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test Phase                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Production Readiness Review      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| 18K Vertical Development         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Preliminary Design Review II     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Design and Fabrication II        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test Phase II                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| User Test                        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Production Readiness Review II   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Integrated Heating/Cooling Units |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Procure Off-The-Shelf Units      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test Systems                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Develop PD                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2014 Army

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

2040: *Research, Development, Test & Evaluation, Army*  
BA 5: *System Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**

PE 0604804A: *Logistics and Engineer Equipment - Eng Dev*

**PROJECT**

L47: *Improved Environmental Control Units Ed*

## Schedule Details

| Events                           | Start   |      | End     |      |
|----------------------------------|---------|------|---------|------|
|                                  | Quarter | Year | Quarter | Year |
| Production Qualification Test    | 2       | 2012 | 2       | 2013 |
| Conduct User Evaluation          | 1       | 2013 | 2       | 2013 |
| Logistics Demonstration          | 2       | 2013 | 4       | 2013 |
| Milestone C/LRIP Decision        | 2       | 2013 | 2       | 2013 |
| LRIP/TC Std/FMR Work             | 2       | 2013 | 2       | 2014 |
| Full Rate Production Decision    | 2       | 2014 | 2       | 2014 |
| Trailer Variants IECU            | 1       | 2013 | 4       | 2014 |
| Preliminary Design Review        | 1       | 2013 | 1       | 2013 |
| Design and Fabrication           | 1       | 2013 | 2       | 2013 |
| CDR Trailers                     | 3       | 2013 | 3       | 2013 |
| Test Phase                       | 3       | 2013 | 2       | 2014 |
| Production Readiness Review      | 2       | 2014 | 2       | 2014 |
| 18K Vertical Development         | 1       | 2013 | 2       | 2015 |
| Preliminary Design Review II     | 3       | 2013 | 3       | 2013 |
| Design and Fabrication II        | 3       | 2013 | 3       | 2014 |
| Test Phase II                    | 2       | 2014 | 4       | 2014 |
| User Test                        | 1       | 2015 | 1       | 2015 |
| Production Readiness Review II   | 2       | 2015 | 2       | 2015 |
| Integrated Heating/Cooling Units | 1       | 2013 | 4       | 2014 |
| Procure Off-The-Shelf Units      | 4       | 2013 | 4       | 2013 |
| Test Systems                     | 1       | 2014 | 3       | 2014 |
| Develop PD                       | 3       | 2014 | 4       | 2014 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               | DATE: April 2013 |                     |               |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |         |                      |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>L50: JOINT LIGHT TACTICAL VEHICLES<br>(JLTV) - SDD |                  |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO <sup>##</sup>                                                        | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                                       | FY 2018          | Cost To<br>Complete | Total<br>Cost |
| L50: JOINT LIGHT TACTICAL<br>VEHICLES (JLTV) - SDD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                  | 84.500  | 0.000                | 0.000           | -                                                                                   | 0.000            | 0.000   | 0.000   | 0.000                                                         | 0.000            | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| Transition of funding from PE 0604804A, Project L50 to PE 0605812A, Project VU9 occurs in FY 2013 and outyears.<br>FY 2008 - FY 2011 funding for the Joint Light Tactical Vehicles (JLTV) program is under Program Element (PE) 0603804A, Project L04.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| Funding supports the development and testing of the Joint Light Tactical Vehicle (JLTV) Family of Vehicles (FoV), which is a joint program between the U.S. Army and the U.S. Marine Corps. The JLTV goal is a FoV capable of performing multiple mission roles that will be designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., between vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |         |                      |                 |                                                                                     |                  |         |         | FY 2012                                                       | FY 2013          | FY 2014             |               |
| Title: Joint Light Tactical Vehicles (JLTV) Program Management Support<br><br>Articles:<br><br>Description: Funding is provided for the support of program management government operations.<br><br>FY 2012 Accomplishments:<br>Various costs to provide effort during the Engineering and Manufacturing Development (EMD) phase and contract source selection board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |         |                      |                 |                                                                                     |                  |         |         | 4.910<br>0                                                    | 0.000            | 0.000               |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |
| Title: Engineering and Manufacturing Development (EMD) Prototype Contract and Support for Development and Fabrication.<br><br>Articles:<br><br>Description: Funding is provided for EMD prototype Joint Light Tactical Vehicle development and fabrication.<br><br>FY 2012 Accomplishments:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 |                                                                                     |                  |         |         | 73.026<br>0                                                   | 0.000            | 0.000               |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |         |                      |                 |                                                                                     |                  |         |         |                                                               |                  |                     |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                       |         |         |                 |                |                                                                                     |         |         |         | DATE: April 2013                                              |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                       |         |         |                 |                | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |         |         |         | PROJECT<br>L50: JOINT LIGHT TACTICAL VEHICLES<br>(JLTV) - SDD |                     |            |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                              |         |         |                 |                |                                                                                     |         |         |         | FY 2012                                                       | FY 2013             | FY 2014    |
| Funding is provided for EMD prototype Joint Light Tactical Vehicle development and fabrication.                                                               |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| Title: Engineering and Manufacturing Developmental Test and Evaluation                                                                                        |         |         |                 |                | Articles:                                                                           |         |         |         | 1.763<br>0                                                    | 0.000               | 0.000      |
| Description: Funding is provided for Engineering and Manufacturing Development test support to include the start of coupon testing.                           |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| FY 2012 Accomplishments:<br>Engineering and Manufacturing Development testing.                                                                                |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| Title: Government Furnished Equipment and Management.                                                                                                         |         |         |                 |                | Articles:                                                                           |         |         |         | 4.801<br>0                                                    | 0.000               | 0.000      |
| Description: Government furnished equipment for Joint Light Tactical Vehicles (JLTV) Engineering, Manufacturing, and Development contract phase.              |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| FY 2012 Accomplishments:<br>Government furnished equipment for Joint Light Tactical Vehicles (JLTV) Engineering and Manufacturing Development contract phase. |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| Accomplishments/Planned Programs Subtotals                                                                                                                    |         |         |                 |                |                                                                                     |         |         |         | 84.500                                                        | 0.000               | 0.000      |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                             |         |         |                 |                |                                                                                     |         |         |         |                                                               |                     |            |
| Line Item                                                                                                                                                     | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO | FY 2014<br>Total                                                                    | FY 2015 | FY 2016 | FY 2017 | FY 2018                                                       | Cost To<br>Complete | Total Cost |
| • PM JLTV PROJECT VU9: Joint<br>Light Tactical Vehicles (JLTV),<br>0605812A, Army RDTE Project<br>VU9                                                         |         | 72.295  | 84.230          |                | 84.230                                                                              | 34.700  | 33.224  | 26.123  | 3.281                                                         | Continuing          | Continuing |
| • PM JLTV PRODUCTION<br>D15603: Joint Light Tactical<br>Vehicles (JLTV), D15603, Army<br>OPA 1                                                                |         |         |                 |                |                                                                                     | 178.305 | 312.866 | 606.299 | 846.919                                                       | Continuing          | Continuing |
| • PM JLTV PROJECT 3209<br>0603635M: Marine Corps Ground                                                                                                       | 45.945  |         |                 |                |                                                                                     |         |         |         |                                                               | 0.000               | 45.945     |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                     |                  |         |         |                                                               | DATE: April 2013 |                     |            |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>L50: JOINT LIGHT TACTICAL VEHICLES<br>(JLTV) - SDD |                  |                     |            |
| C. Other Program Funding Summary (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| Line Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | FY 2012 | FY 2013 | FY 2014<br>Base | FY 2014<br>OCO                                                                      | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                                       | FY 2018          | Cost To<br>Complete | Total Cost |
| Combat/Support Systems, RDTE<br>Project 3209 0603635M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| • PM JLTV PROJECT 3209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | 44.500  | 50.362          |                                                                                     | 50.362           | 16.606  | 33.058  | 23.938                                                        | 2.372            | Continuing          | Continuing |
| 0605812M: Marine Corps Ground<br>Combat/Support Systems, RDTE<br>Project 3209 0605812M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| • PM JLTV PRODUCTION 5095:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |         |                 |                                                                                     |                  | 30.521  | 99.536  | 143.062                                                       | 520.468          | Continuing          | Continuing |
| Marine Corps Ground Combat/<br>Support Systems, Production 5095                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| D. Acquisition Strategy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| Joint Light Tactical Vehicles (JLTV) is a Joint Services Program with the U.S. Army and U.S. Marine Corps as the two main components. In addition, the Navy anticipates procuring JLTV vehicles upon successful Low-Rate Initial Production (LRIP) testing. The program will use an evolutionary approach to deliver capabilities in increments based on program priorities. All technologies entering the current Engineering, Manufacturing and Development (EMD) phase shall be no less than Technology Readiness Level 6 to achieve Capabilities Development Document (CDD) requirements.                                                                                                                                                                                                                                                                                                                                                               |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| The program revised the acquisition strategy in the first quarter FY 2012 addressing Better Buying Power Initiatives, and reduced the schedule by 15 months to enable a 33-month Non-Developmental Item approach for EMD with Milestone B approved on 9 August 2012.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| Increment I will produce two Mission Role Variant (MRV) configurations (Combat Tactical Vehicle (CTV) and Combat Support Vehicle (CSV)) with mission packages (General Purpose, Heavy Guns Carrier, Close Combat Weapons Carrier, and Utility/Shelter Carrier). EMD vendors will fabricate representative mission packages from both MRVs, which the Government will fully test during the EMD phase. Agreement was reached between the PM and user community to eliminate two mission packages, the Special Purpose (SP) and Command and Control On-The Move (C2OTM) vehicles which integrated Warfighter Information Network-Tactical (WIN-T) systems for the Army. Eliminating these unique vehicles reduces technical risk and cost of the JLTV EMD effort. It also eliminates duplicate development and relies on the WIN-T program's existing efforts to fund, integrate, and test their capabilities on other vehicles during the JLTV EMD schedule. |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |
| Through a full and open competition, the program awarded three firm-fixed price contracts for the EMD phase on 22 August 2012. Unless future market research identifies a valid non-EMD vendor capable of delivering the required capabilities, there will be a down-select from the EMD contractors to enter into the Production and Deployment phase. The down-select will result in a fixed-price type contract with a base LRIP quantity, LRIP options, full-rate production options, and a Technical Data Package option.                                                                                                                                                                                                                                                                                                                                                                                                                              |         |         |                 |                                                                                     |                  |         |         |                                                               |                  |                     |            |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                   |                                                                                                | <b>DATE:</b> April 2013                                                  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L50: <i>JOINT LIGHT TACTICAL VEHICLES (JLTV) - SDD</i> |

### E. Performance Metrics

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

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                                                                                                                                                 |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                                  |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                              |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L50: <i>JOINT LIGHT TACTICAL VEHICLES (JLTV) - SDD</i> |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                                                                                                                                                                       |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                                                                                                                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Contract Service Support                                                                                                                                                                                                                                                                          | SS/CPFF                           | Booz-Allen Hamilton,;McLean, VA           | 0.000                  | 2.681          | Apr 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | Continuing              | Continuing        | Continuing                      |
| Contract Service Support                                                                                                                                                                                                                                                                          | SS/CPFF                           | Camber Corporation,;Huntsville, AL        | 0.000                  | 0.251          | Sep 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | Continuing              | Continuing        | Continuing                      |
| <b>Subtotal</b>                                                                                                                                                                                                                                                                                   |                                   |                                           | 0.000                  | 2.932          |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                                    |                         |                   |                                 |
| <b>Product Development (\$ in Millions)</b>                                                                                                                                                                                                                                                       |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                                                                                                                                                         | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Contract                                                                                                                                                                                                            | C/FFP                             | Oshkosh Corporation,;Oshkosh, WI          | 0.000                  | 25.703         | Aug 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 30.175                  | 55.878            | 55.878                          |
| JLTV Engineering and Manufacturing Development Contract                                                                                                                                                                                                                                           | C/FFP                             | AM General,;South Bend, IN                | 0.000                  | 23.515         | Aug 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 40.365                  | 63.880            | 63.880                          |
| Engineering and Manufacturing Development Contract                                                                                                                                                                                                                                                | C/FFP                             | Lockheed Martin,;Grand Prairie, TX        | 0.000                  | 14.548         | Aug 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 50.452                  | 65.000            | 65.000                          |
| <b>Subtotal</b>                                                                                                                                                                                                                                                                                   |                                   |                                           | 0.000                  | 63.766         |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                                    | 120.992                 | 184.758           | 184.758                         |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                    |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                                          |                         |                   |                                 |
| The Joint Light Tactical Vehicle (JLTV) is a Joint Services Program with the U.S. Army and U.S. Marine Corps as the two main components. Contract awards will continue to be funded through FY 2015 under U.S. Army PE 0605812A Project VU9 and U.S. Marine Corps under PE 0605812M Project 3209. |                                   |                                           |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   |                                                                          |                         |                   |                                 |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                                                    |                                   |                                                                                    |                        |                |                   |                                                                                                |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                                                  |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |                                   |                                                                                    |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                   |                     |                   |                    |                   | <b>PROJECT</b><br>L50: <i>JOINT LIGHT TACTICAL VEHICLES (JLTV) - SDD</i> |                         |                   |                                 |
| <b>Support (\$ in Millions)</b>                                                                                                                                      |                                   |                                                                                    |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                                 |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                                     |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                                            | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                                          | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                                    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                                              | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| JLTV Program Management                                                                                                                                              | Various                           | TACOM Life Cycle Management Command (LCMC),:Harrison Township, MI                  | 0.000                  | 4.240          | Dec 2011          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | Continuing              | Continuing        | 0.000                           |
| JLTV Program Prototype for Engineering and Manufacturing Development (EMD) Phase                                                                                     | MIPR                              | Tank-Automotive Research, Development, and Engineering Center - TARDEC,:Warren, MI | 0.000                  | 3.948          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | Continuing              | Continuing        | 0.000                           |
| JLTV Prototype for EMD Phase - Cost and Systems, Legal, Budget, Safety, Security, Contracting, ILSC                                                                  | MIPR                              | TACOM Life Cycle Management Command (LCMC),:Warren, MI                             | 0.000                  | 2.170          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | Continuing              | Continuing        | 0.000                           |
| Government Furnished Equipment (GFE) / GFE Management                                                                                                                | Various                           | Various:Various                                                                    | 0.000                  | 4.801          | Feb 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 0.000                   | 4.801             | 0.000                           |
| JLTV Source Selection Evaluation Board                                                                                                                               | MIPR                              | Various:Various                                                                    | 0.000                  | 0.210          | Mar 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 0.000                   | 0.210             | 0.000                           |
| Engineering and Manufacturing Development (EMD) Analysis and Evaluation                                                                                              | MIPR                              | Tank-Automotive Research, Development, and Engineering Center - TARDEC,:Warren, MI | 0.000                  | 0.670          | Jul 2012          | -                                                                                              |                   | -                   |                   | -                  |                   | -                                                                        | 0.000                   | 0.670             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                                      |                                   |                                                                                    | 0.000                  | 16.039         |                   | 0.000                                                                                          |                   | 0.000               |                   | 0.000              |                   | 0.000                                                                    |                         |                   | 0.000                           |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army                                                          |                              |                                                                                                   |                    |         |               |                                                            |               |                 |               |                                                    |               | DATE: April 2013 |                     |               |                                |
|-----------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|--------------------|---------|---------------|------------------------------------------------------------|---------------|-----------------|---------------|----------------------------------------------------|---------------|------------------|---------------------|---------------|--------------------------------|
| APPROPRIATION/BUDGET ACTIVITY                                                                                   |                              |                                                                                                   |                    |         |               | R-1 ITEM NOMENCLATURE                                      |               |                 |               | PROJECT                                            |               |                  |                     |               |                                |
| 2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)          |                              |                                                                                                   |                    |         |               | PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |               |                 |               | L50: JOINT LIGHT TACTICAL VEHICLES<br>(JLTV) - SDD |               |                  |                     |               |                                |
| Test and Evaluation (\$ in Millions)                                                                            |                              |                                                                                                   |                    | FY 2012 |               | FY 2013                                                    |               | FY 2014<br>Base |               | FY 2014<br>OCO                                     |               | FY 2014<br>Total |                     |               |                                |
| Cost Category Item                                                                                              | Contract<br>Method<br>& Type | Performing<br>Activity & Location                                                                 | All Prior<br>Years | Cost    | Award<br>Date | Cost                                                       | Award<br>Date | Cost            | Award<br>Date | Cost                                               | Award<br>Date | Cost             | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| JLTV EMD Phase Test<br>and Evaluation - initiation<br>of coupon test                                            | MIPR                         | Tank-Automotive<br>Research,<br>Development, and<br>Engineering Center<br>- TARDEC,:Warren,<br>MI | 0.000              | 0.088   | Oct 2012      | -                                                          |               | -               |               | -                                                  |               | -                | 0.000               | 0.088         | 0.088                          |
| JLTV EMD Phase<br>Coupons - bid samples<br>and coupons preparation                                              | MIPR                         | Aberdeen Test<br>Center,:Aberdeen<br>Proving Ground, MD                                           | 0.000              | 0.250   | May 2012      | -                                                          |               | -               |               | -                                                  |               | -                | 0.000               | 0.250         | 0.250                          |
| JLTV EMD Phase Ballistic<br>Planning                                                                            | MIPR                         | Army Research<br>Laboratory,:Aberdeen<br>Proving Ground, MD                                       | 0.000              | 1.090   | Nov 2012      | -                                                          |               | -               |               | -                                                  |               | -                | Continuing          | Continuing    | Continuing                     |
| EMD Phase Information<br>Assurance (IA)<br>Certification and<br>Interoperability, Health<br>Hazard Assessments. | MIPR                         | Various:Various                                                                                   | 0.000              | 0.335   | Sep 2012      | -                                                          |               | -               |               | -                                                  |               | -                | 0.000               | 0.335         | 0.340                          |
| Subtotal                                                                                                        |                              |                                                                                                   | 0.000              | 1.763   |               | 0.000                                                      |               | 0.000           |               | 0.000                                              |               | 0.000            |                     |               |                                |
|                                                                                                                 |                              |                                                                                                   | All Prior<br>Years | FY 2012 |               | FY 2013                                                    |               | FY 2014<br>Base |               | FY 2014<br>OCO                                     |               | FY 2014<br>Total | Cost To<br>Complete | Total<br>Cost | Target<br>Value of<br>Contract |
| Project Cost Totals                                                                                             |                              |                                                                                                   | 0.000              | 84.500  |               | 0.000                                                      |               | 0.000           |               | 0.000                                              |               | 0.000            |                     |               |                                |
| Remarks                                                                                                         |                              |                                                                                                   |                    |         |               |                                                            |               |                 |               |                                                    |               |                  |                     |               |                                |

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|-----------------------------------------------------------------------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|-------------------------------------------------------------------------------------|---|---|---|---------|---|---|------------------|---------------------------------------------------------------|---|---|---|---------|---|---|---|---------|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army                                                                                       |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   | DATE: April 2013 |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |         |   |   |   |         |   |   |   | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |   |   |   |         |   |   |                  | PROJECT<br>L50: JOINT LIGHT TACTICAL VEHICLES<br>(JLTV) - SDD |   |   |   |         |   |   |   |         |   |   |   |
|                                                                                                                                         | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014                                                                             |   |   |   | FY 2015 |   |   |                  | FY 2016                                                       |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|                                                                                                                                         | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1                                                                                   | 2 | 3 | 4 | 1       | 2 | 3 | 4                | 1                                                             | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Joint Capability Development Document (CDD) Approved                                                                                    |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| Engineering and Manufacturing Development (EMD) Request For Proposal release                                                            |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| Source Selection Evaluation Board (SSEB)                                                                                                |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| Milestone B (MS B)                                                                                                                      |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| EMD Contract Award                                                                                                                      |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| EMD Contract                                                                                                                            |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |
| EMD Test and Validation / Report                                                                                                        |         |   |   |   |         |   |   |   |                                                                                     |   |   |   |         |   |   |                  |                                                               |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                                          | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>L50: <i>JOINT LIGHT TACTICAL VEHICLES (JLTV) - SDD</i> |                         |

Schedule Details

| Events                                                                       | Start   |      | End     |      |
|------------------------------------------------------------------------------|---------|------|---------|------|
|                                                                              | Quarter | Year | Quarter | Year |
| Joint Capability Development Document (CDD) Approved                         | 2       | 2012 | 2       | 2012 |
| Engineering and Manufacturing Development (EMD) Request For Proposal release | 2       | 2012 | 2       | 2012 |
| Source Selection Evaluation Board (SSEB)                                     | 2       | 2012 | 4       | 2012 |
| Milestone B (MS B)                                                           | 4       | 2012 | 4       | 2012 |
| EMD Contract Award                                                           | 4       | 2012 | 4       | 2012 |
| EMD Contract                                                                 | 4       | 2012 | 4       | 2013 |
| EMD Test and Validation / Report                                             | 1       | 2013 | 4       | 2013 |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|----------------------|-----------------|-------------------------------------------------------------------------------------|------------------|---------|---------|------------------------------------------------|------------|---------------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |         |                      |                 |                                                                                     |                  |         |         | DATE: April 2013                               |            |                     |               |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |         |                      |                 | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev |                  |         |         | PROJECT<br>VR7: Combat Service Support Systems |            |                     |               |
| COST (\$ in Millions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | All Prior<br>Years | FY 2012 | FY 2013 <sup>#</sup> | FY 2014<br>Base | FY 2014<br>OCO <sup>##</sup>                                                        | FY 2014<br>Total | FY 2015 | FY 2016 | FY 2017                                        | FY 2018    | Cost To<br>Complete | Total<br>Cost |
| VR7: Combat Service Support<br>Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -                  | 2.465   | 1.745                | 1.193           | -                                                                                   | 1.193            | 1.965   | 2.054   | 1.915                                          | 1.915      | Continuing          | Continuing    |
| Quantity of RDT&E Articles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| # FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| ## The FY 2014 OCO Request will be submitted at a later date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| A. Mission Description and Budget Item Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| This project supports the System Development and Demonstration (SDD) of critical distribution and sustainment capabilities to include base camp subsystems, field shelters, showers, latrines, heaters, mortuary affairs systems, camouflage systems, organizational equipment, and other combat service support equipment to fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports development of expeditionary tactical field systems and support equipment to improve safety, effectiveness, and efficiency of deployed soldiers. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and the Army's Modular Force 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), lift demands, the combat zone footprint, and costs for logistical support. |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 |                                                                                     |                  |         |         | FY 2012                                        | FY 2013    | FY 2014             |               |
| <b>Title:</b> Human Remains Temperature Controlled Transfer Case (HRTC2)<br><br><b>Articles:</b><br><br><b>Description:</b> The HRTC2 is a replacement for the current aluminum case for transporting remains from a theater of operation to CONUS that incorporates insulation and refrigeration to provide optimal temperature control and eliminate use of ice and the need for re-icing in route.<br><br><b>FY 2012 Accomplishments:</b><br>Conduct testing and develop documentation for Milestone C Type Classification.<br><br><b>FY 2013 Plans:</b><br>Complete Milestone C and award the production contract.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |         |                      |                 |                                                                                     |                  |         |         | 0.600<br>0                                     | 0.600<br>0 | 0.000               |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |         |                      |                 |                                                                                     |                  |         |         |                                                |            |                     |               |
| <b>Title:</b> Modular Ballistic Protection System (MBPS)<br><br><b>Articles:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |         |                      |                 |                                                                                     |                  |         |         | 0.571<br>0                                     | 0.378<br>0 | 0.368               |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                     | DATE: April 2013                               |            |         |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | R-1 ITEM NOMENCLATURE<br>PE 0604804A: Logistics and Engineer<br>Equipment - Eng Dev | PROJECT<br>VR7: Combat Service Support Systems |            |         |
| B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     | FY 2012                                        | FY 2013    | FY 2014 |
| <p><b>Description:</b> MBPS 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.</p> <p><b>FY 2012 Accomplishments:</b><br/>Conduct Operational Testing (OT) on Tent Extendable Modular Personnel (TEMPER) version of the MBPS.</p> <p><b>FY 2013 Plans:</b><br/>Conduct OT for MBPS stand-alone variant, prepare for Milestone C and transition to production.</p> <p><b>FY 2014 Plans:</b><br/>Award development contract to procure test items for MBPS stand-alone variant. Prepare documentation to support Milestone C production decision and initiate transition to production.</p>                                                                                                           |                                                                                     |                                                |            |         |
| <p><b>Title:</b> Family of Space Heaters</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>Description:</b> The family of Army Space Heaters support soldiers operating in basic, cold and extreme cold environments with a safe, portable, lightweight, multi-fueled, self-powered, space heaters for use in multiple tents and/or expeditionary shelters that do not require an external power source. These heaters provide the much needed capability of providing heated air effectively and efficiently while eliminating the shortcomings of the antiquated, dangerous and inefficient heaters they are replacing in the inventory.</p> <p><b>FY 2012 Accomplishments:</b><br/>Execute Pre-Planned Product Improvement (P3I) effort on the family of Space Heaters to improve on fuel efficiency</p> <p><b>FY 2013 Plans:</b><br/>Complete Developmental and Operational Test on P3I improvements to Army Space Heater and update procurement specification.</p> |                                                                                     | 0.148<br>0                                     | 0.100<br>0 | 0.000   |
| <p><b>Title:</b> Net-Zero Energy Efficiency Solutions</p> <p style="text-align: right;"><b>Articles:</b></p> <p><b>Description:</b> Net-Zero Energy Efficiency Solutions reduce 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. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     | 1.069<br>0                                     | 0.667<br>0 | 0.825   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Army                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |                |                         |                                                                                                |                          |                |                |                                                              |                | <b>DATE:</b> April 2013        |                   |                |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                |                         | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |                          |                |                | <b>PROJECT</b><br>VR7: <i>Combat Service Support Systems</i> |                |                                |                   |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b><br>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.<br><br><b>FY 2012 Accomplishments:</b><br>Complete Development of Energy Efficiency (E2) shelter kit solutions for Force Provider modules and conduct Developmental Testing (DT)<br><br><b>FY 2013 Plans:</b><br>Conduct Operational Testing (OT) on Energy Efficiency (E2) shelter kit solutions for Force Provider modules. Obtain full material release of E2 kits and transition into production.<br><br><b>FY 2014 Plans:</b><br>Conduct OT on Force Provider 150-Soldier module with integrated Advanced Medium-sized Mobile Power Source (AMMPS) Micro-grid. Obtain material release and transition into production. Provide technical support to Contingency Basing Infrastructure initiative to transition applicable technology to Force Provider. |                |                |                         |                                                                                                |                          |                |                |                                                              |                | <b>FY 2012</b>                 | <b>FY 2013</b>    | <b>FY 2014</b> |
| <b>Title:</b> SBIR+STTR<br><br><b>Description:</b> SBIR+STTR<br><br><b>FY 2012 Accomplishments:</b><br>SBIR+STTR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                         |                                                                                                |                          |                |                |                                                              |                | <b>Articles:</b><br>0.077<br>0 | 0.000             | 0.000          |
| <b>Accomplishments/Planned Programs Subtotals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                |                         |                                                                                                |                          |                |                |                                                              |                | 2.465                          | 1.745             | 1.193          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                |                         |                                                                                                |                          |                |                |                                                              |                |                                |                   |                |
| <b>Line Item</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>FY 2012</b> | <b>FY 2013</b> | <b>FY 2014<br/>Base</b> | <b>FY 2014<br/>OCO</b>                                                                         | <b>FY 2014<br/>Total</b> | <b>FY 2015</b> | <b>FY 2016</b> | <b>FY 2017</b>                                               | <b>FY 2018</b> | <b>Cost To<br/>Complete</b>    | <b>Total Cost</b> |                |
| • 643804 K39: <i>Field Sustainment AD,</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.857          | 2.970          | 2.161                   |                                                                                                | 2.161                    | 3.061          | 3.434          | 2.727                                                        | 2.801          | Continuing                     | Continuing        |                |
| • 643804 VR8: <i>Combat Service Support Systems AD,</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.977          | 2.023          | 1.613                   |                                                                                                | 1.613                    | 2.405          | 2.619          | 2.415                                                        | 2.415          | Continuing                     | Continuing        |                |
| • 654804 L39: <i>Field Sustainment Support ED,</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4.094          | 2.550          | 1.789                   |                                                                                                | 1.789                    | 2.753          | 2.588          | 2.269                                                        | 2.456          | Continuing                     | Continuing        |                |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                |                         |                                                                                                |                          |                |                |                                                              |                |                                |                   |                |

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| Exhibit R-2A, RDT&E Project Justification: PB 2014 Army                                                                                                                                             |                                                                                         | DATE: April 2013                                      |
| APPROPRIATION/BUDGET ACTIVITY<br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i>                                       | R-1 ITEM NOMENCLATURE<br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | PROJECT<br>VR7: <i>Combat Service Support Systems</i> |
| <b>D. Acquisition Strategy</b><br>Accelerate product development and testing to transition into production.                                                                                         |                                                                                         |                                                       |
| <b>E. Performance Metrics</b><br>Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010. |                                                                                         |                                                       |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Army</b>                                                                              |                                   |                                           |                        |                |                   |                                                                                         |                   |                     |                   |                    |                   | <b>DATE:</b> April 2013                               |                         |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: Research, Development, Test & Evaluation, Army<br>BA 5: System Development & Demonstration (SDD) |                                   |                                           |                        |                |                   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: Logistics and Engineer Equipment - Eng Dev |                   |                     |                   |                    |                   | <b>PROJECT</b><br>VR7: Combat Service Support Systems |                         |                   |                                 |
| <b>Management Services (\$ in Millions)</b>                                                                                                    |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Project Management Support                                                                                                                     | Various                           | PM Force Sustainment Systems:Natick, MA   | 0.000                  | 0.160          |                   | 0.162                                                                                   |                   | 0.125               |                   | -                  |                   | 0.125                                                 | Continuing              | Continuing        | 0.000                           |
| SBIR+STTR                                                                                                                                      | TBD                               | Various:Various                           | 0.000                  | 0.077          |                   | -                                                                                       |                   | -                   |                   | -                  |                   | -                                                     | 0.000                   | 0.077             | 0.000                           |
| <b>Subtotal</b>                                                                                                                                |                                   |                                           | 0.000                  | 0.237          |                   | 0.162                                                                                   |                   | 0.125               |                   | 0.000              |                   | 0.125                                                 |                         |                   | 0.000                           |
| <b>Product Development (\$ in Millions)</b>                                                                                                    |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Soldier Support Equipment                                                                                                                      | TBD                               | Various:Various                           | 0.000                  | 1.246          |                   | 0.897                                                                                   |                   | 0.453               |                   | -                  |                   | 0.453                                                 | Continuing              | Continuing        | 0.000                           |
| <b>Subtotal</b>                                                                                                                                |                                   |                                           | 0.000                  | 1.246          |                   | 0.897                                                                                   |                   | 0.453               |                   | 0.000              |                   | 0.453                                                 |                         |                   | 0.000                           |
| <b>Test and Evaluation (\$ in Millions)</b>                                                                                                    |                                   |                                           |                        | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                  |                         |                   |                                 |
| <b>Cost Category Item</b>                                                                                                                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>All Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>                                                                             | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>                                           | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| Soldier Support Equipment                                                                                                                      | Various                           | Various:Various                           | 0.000                  | 0.982          |                   | 0.686                                                                                   |                   | 0.615               |                   | -                  |                   | 0.615                                                 | Continuing              | Continuing        | 0.000                           |
| <b>Subtotal</b>                                                                                                                                |                                   |                                           | 0.000                  | 0.982          |                   | 0.686                                                                                   |                   | 0.615               |                   | 0.000              |                   | 0.615                                                 |                         |                   | 0.000                           |
|                                                                                                                                                |                                   |                                           | <b>All Prior Years</b> | <b>FY 2012</b> |                   | <b>FY 2013</b>                                                                          |                   | <b>FY 2014 Base</b> |                   | <b>FY 2014 OCO</b> |                   | <b>FY 2014 Total</b>                                  | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>                                                                                                                     |                                   |                                           | 0.000                  | 2.465          |                   | 1.745                                                                                   |                   | 1.193               |                   | 0.000              |                   | 1.193                                                 |                         |                   | 0.000                           |
| <b>Remarks</b>                                                                                                                                 |                                   |                                           |                        |                |                   |                                                                                         |                   |                     |                   |                    |                   |                                                       |                         |                   |                                 |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Army                                                                                                         |  |  | <b>DATE:</b> April 2013                                                                        |  |  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> |  |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> |  |  |
|                                                                                                                                                                      |  |  | <b>PROJECT</b><br>VR7: <i>Combat Service Support Systems</i>                                   |  |  |

|                                                                                   | FY 2012 |   |   |   | FY 2013 |   |   |   | FY 2014 |   |   |   | FY 2015 |   |   |   | FY 2016 |   |   |   | FY 2017 |   |   |   | FY 2018 |   |   |   |
|-----------------------------------------------------------------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
|                                                                                   | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 | 1       | 2 | 3 | 4 |
| Conduct testing on HRTC2                                                          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Transition Zero-Footprint Base Camp capabilities into Joint Base Camp systems     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Obtain Milestone C for MBPS stand alone                                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Transition MBPS capability into Base Camp systems                                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Obtain Milestone C TC on Mobile Integrated Shop Shelter System                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct OT SoS Base Camp Efficiency & Environ Combat Outpost                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Obtain MS C TC SoS Base Camp Efficiency & Environ Combat Outpost                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct Technology Improvements and development of other variants for ULCANS      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct DT & OT on Net-Zero Energy Efficiency Solution & transition to production |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Transition Army Space Heater P3I effort into production                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct DV on Force Provider Renewable Energy Kits                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Conduct DT/OT on Force Provider Renewable Energy Kits                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Army                                                                                                        |                                                                                                |                                                              | <b>DATE:</b> April 2013 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army</i><br>BA 5: <i>System Development &amp; Demonstration (SDD)</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0604804A: <i>Logistics and Engineer Equipment - Eng Dev</i> | <b>PROJECT</b><br>VR7: <i>Combat Service Support Systems</i> |                         |

**Schedule Details**

| <b>Events</b>                                                                     | <b>Start</b>   |             | <b>End</b>     |             |
|-----------------------------------------------------------------------------------|----------------|-------------|----------------|-------------|
|                                                                                   | <b>Quarter</b> | <b>Year</b> | <b>Quarter</b> | <b>Year</b> |
| Conduct testing on HRTC2                                                          | 4              | 2012        | 2              | 2013        |
| Transition Zero-Footprint Base Camp capabilities into Joint Base Camp systems     | 1              | 2014        | 4              | 2016        |
| Obtain Milestone C for MBPS stand alone                                           | 3              | 2015        | 3              | 2015        |
| Transition MBPS capability into Base Camp systems                                 | 4              | 2015        | 1              | 2016        |
| Obtain Milestone C TC on Mobile Integrated Shop Shelter System                    | 2              | 2018        | 2              | 2018        |
| Conduct OT SoS Base Camp Efficiency & Environ Combat Outpost                      | 1              | 2016        | 4              | 2016        |
| Obtain MS C TC SoS Base Camp Efficiency & Environ Combat Outpost                  | 2              | 2017        | 2              | 2017        |
| Conduct Technology Improvements and development of other variants for ULCANS      | 1              | 2015        | 4              | 2018        |
| Conduct DT & OT on Net-Zero Energy Efficiency Solution & transition to production | 2              | 2013        | 4              | 2016        |
| Transition Army Space Heater P3I effort into production                           | 4              | 2013        | 4              | 2013        |
| Conduct DV on Force Provider Renewable Energy Kits                                | 3              | 2017        | 4              | 2017        |
| Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider                    | 3              | 2017        | 1              | 2018        |
| Conduct DT/OT on Force Provider Renewable Energy Kits                             | 1              | 2018        | 4              | 2018        |